



Chronological History Fiscal Year 1979 Budget Submission

Prepared by:
Associate Administrator/
Comptroller
Budget Operations Division
Code BTF-3 Ext. 58466

August 31, 1979

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FISCAL YEAR 1979

LEGISLATIVE REFERENCE													
Item	Statistics	Authorization Page Numbers					Appropriation Page Numbers						
		House Auth Comm	Senate Auth Comm	Conf Comm (Auth)	P.L. 95-401	P.L. 96-16	House Approp Comm	Senate Approp Comm	Conference Comm. (Appn)	P.L. 95-392	P.L. 95-429	P.L. 96-7	P.L. 96-38
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Space Flight Operations.....	3	9	27	41			47						
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Lunar and Planetary Exploration.....	4	---	29	---			47						
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Space Applications.....	4	10	29	41			47						
Technology Utilization.....	5	10	30	41			---						
Aeronautical Research and Technology.....	5	10	30	41			47						
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Jet Propulsion Laboratory.....	6	---	---	---									
Langley Research Center.....	6	---	---	---									
Lewis Research Center.....	6	---	---	---									
Large Aeronautical Facilities.....	6	---	---	---									
Space Shuttle Facilities.....	7	---	---	---									
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<u>Subfunction Codes and Titles</u>													
253 Space Transportation Systems													
254 Space Science, Applications, and Technology													
255 Supporting Space Activities													
402 Air Transportation													

Note: Legislative documents reproduced herein are not complete in all cases. For complete text, refer to the document itself.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1979 Budget Submission
(In thousands of dollars)

I T E M	A U T H O R I Z A T I O N					A P P R O P R I A T I O N						
	NASA Budget Submission	House Comm H.R. 11401 Rep. 95-973 3-15-78 Appd.4-25-78	Senate Comm H.R. 11401 Rep. 95-799 5-10-78 Appd.5-18-78	Conf. Comm. App.8-17-78 Rep.95-1509 P.L.95-401 Appd.9/30/78	Difference from Budget Submission	House Comm H.R. 12936 Rep.95-1255 6-1-78 Appd.6-19-78	Senate Comm H.R. 12936 Rep.95-1060 8-1-78	Senate Approved 8-7-78	Conf. Comm. Appd.9-13-78 Rep.95-1569 P. L.95-392 Appd. 9-30-78	Difference from Budget Submission	Difference from Authorization	
TOTAL APPROPRIATION:												
Research & Development..	3,490,100	3,538,800	3,507,100	3,522,600	+32,500	3,477,200	3,480,700	3,475,700	3,477,200	-12,900	-45,400	
Basic Submission.....	3,305,100	3,353,800	3,322,100	3,337,600	+32,500	3,292,200	3,295,700	3,290,700 ^{1/}	3,292,200	-12,900	-45,400	
Supplemental 3/ 4/.....	185,000	185,000	185,000	185,000	---	185,000	185,000	185,000	185,000	---	---	
Construction of Facilities.....	152,500	147,500	152,500	150,000	-2,500	134,690	148,500	148,500	147,500	-5,000	-2,500	
Research and Program Management.....	942,569	939,969	939,969	939,969	-2,600	930,569	937,569	937,569	934,069	-8,500	-5,900	
Basic Submission.....	914,000	914,000	914,000	914,000	---	907,000	914,000	914,000	910,500	-3,500	-3,500	
Rescission 2/.....	-2,400	---	---	---	+2,400	-2,400	-2,400	-2,400	-2,400	---	-2,400	
Supplemental 4/.....	30,969	25,969	25,969	25,969	-5,000	25,969	25,969	25,969	25,969	-5,000	---	
GRAND TOTAL.....	4,585,169	4,626,269	4,599,569	4,612,569	+27,400	4,542,459	4,566,769	4,561,769	4,558,769	-26,400	-53,800	
R&D Appropriation:												
OSTS.....	1,827,700	1,823,700	1,838,700	1,833,200	+5,500	1,833,200	1,827,000	*	*	*	*	
OSS.....	513,200	513,200	515,200	515,200	+2,000	483,200	506,900	*	*	*	*	
OSTA.....	283,400	302,900	283,400	292,400	+9,000	287,400	283,400	*	*	*	*	
OAST.....	375,400	409,600	379,400	391,400	+16,000	385,400	375,400	*	*	*	*	
OSTDS.....	305,400	304,400	305,400	305,400	---	303,000	303,000	*	*	*	*	
Supplemental (OSTS).....	185,000	185,000	185,000	185,000	---	185,000	185,000	185,000	185,000	*	*	
TOTAL R&D.....	3,490,100	3,538,800	3,507,100	3,522,600	+32,500	3,477,200	3,480,700	3,475,700^{1/}	3,477,200	-12,900	-45,400	
CoF Appropriation:												
OSTS.....	31,070	31,070	31,070	31,070	---	18,260	31,070	31,070	31,070	---	---	
OAST.....	76,530	76,530	76,530	76,530	---	76,530	76,530	76,530	76,530	---	---	
Management Operations...	9,190	9,190	9,190	9,190	---	9,190	9,190	9,190	9,190	---	---	
Comptroller.....	35,710	30,710	35,710	33,210	-2,500	30,710	31,710	31,710	30,710	-5,000	-2,500	
TOTAL CoF.....	152,500	147,500	152,500	150,000	-2,500	134,690	148,500	148,500	147,500	-5,000	-2,500	
R&PM Appropriation:												
Basic Submission.....	914,000	914,000	914,000	914,000	---	907,000	914,000	914,000	910,500	-3,500	-3,500	
Rescission.....	-2,400	---	---	---	+2,400	-2,400	-2,400	-2,400	-2,400	---	-2,400	
Supplemental.....	30,969	25,969	25,969	25,969	-5,000	25,969	25,969	25,969	25,969	-5,000	---	
TOTAL R&PM.....	942,569	939,969	939,969	939,969	-2,600	930,569	937,569	937,569	934,069	-8,500	-5,900	
TOTAL, NASA.....	4,585,169	4,626,269	4,599,569	4,612,569	+27,400	4,542,459	4,566,769	4,561,769	4,558,769	-26,400	-53,800	
2/ RESCISSION Research & Program Management						H.R. 2439 Rep. 96-25 3-1-79 Appd.3-6-79	Rep. 96-33 3-8-79	Appd.3-14-79	Conf. Rep. Rep. 96-59 3-20-79 P.L. 96-7 Appd.4-9-79			
SUPPLEMENTAL 3/ Authorization (R&D) 4/ Appropriation (R&D and R&PM)		H.R. 1787 Rep. 96-53 3-19-79 Appd.3-28-79	Rep.96-128 5-10-79 Appd.5-17-79	P.L. 96-16 Appd.6-4-79		H.R. 4289 Rep.96-227 5-31-79 Appd.6-6-79	Rep. 96-224 6-18-79	Appd.6-26-79	Conf. Rep. Rep. 96-331 7-11-79 P.L. 96-38 Appd.7-25-79			

1/ Through an amendment on the floor of the Senate, NASA's Research and Development was reduced by \$5,000,000 as part of an overall reduction of \$810,205,000 of programs to certain agencies.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1979 Budget Submission
(In thousands of dollars)

Subfunction Code	ITEM	AUTHORIZATION					APPROPRIATION					
		NASA Budget Submission	House Comm H.R. 11401 Rep. 95-973 3-15-78 Appd. 4-25-78	Senate Comm H.R. 11401 Rep. 95-799 5-10-78 Appd. 5-18-78	Conf. Comm. Appd. 8-17-78 Rep. 95-1509 P.L. 95-401 Appd. 9-30-78	Difference from Budget Submission	House Comm H.R. 12936 Rep. 95-1255 6-1-78 Appd. 6-19-78	Senate Comm H.R. 12936 Rep. 95-1060 8-1-78	Senate Approved 8-7-78	Conf. Comm. Appd. 9-13-78 Rep. 95-1569 P.L. 95-392 Appd. 9-30-78	Difference from Budget Submission	Difference from Authorization
	RESEARCH AND DEVELOPMENT..	3,490,100	3,538,800	3,507,100	3,522,600	+32,500	3,477,200	3,480,700	3,475,700	3,477,200	-12,900	-45,400
	Basic Submission.....	3,305,100	3,353,800	3,322,100	3,337,600	+32,500	3,292,200	3,295,700	3,290,700 ^{2/}	3,292,200 ^{3/}	-12,900	-45,400
253	Space Shuttle.....	1,439,300	1,443,300	1,443,300	1,443,300	+4,000	1,473,300 ^{1/}	1,443,300	*	*	*	*
253	Space Flight Operations..	311,900	308,900	318,900	315,900	+4,000	288,400	309,700	*	*	*	*
253	Expendable Launch Veh...	76,500	71,500	76,500	74,000	-2,500	71,500	74,000	*	*	*	*
254	Physics and Astronomy...	285,500	285,500	285,500	285,500	---	265,500	284,900	*	*	*	*
254	Lunar and Planetary.....	187,100	187,100	187,100	187,100	---	177,100	181,400	*	*	*	*
254	Life Sciences.....	40,600	40,600	42,600	42,600	+2,000	40,600	40,600	*	*	*	*
254	Space Applications.....	274,300	288,300	274,300	280,300	+6,000	278,300	274,300	*	*	*	*
254	Technology Utilization..	9,100	14,600	9,100	12,100	+3,000	9,100	9,100	*	*	*	*
402	Aeronautical Research and Technology.....	264,100	292,300	264,100	275,100	+11,000	271,100	264,100	*	*	*	*
254	Space Research and Technology.....	108,300	111,300	111,300	111,300	+3,000	108,300	108,300	*	*	*	*
254	Energy Technology Applications.....	3,000	6,000	4,000	5,000	+2,000	6,000	3,000	*	*	*	*
255	Tracking and Data Acq...	305,400	304,400	305,400	305,400	---	303,000	303,000	*	*	*	*
	Supplemental.....	185,000	185,000	185,000	185,000	---	185,000	185,000	185,000	185,000	---	---
	CONSTRUCTION OF FACILITIES	152,500	147,500	152,500	150,000	-2,500	134,690	148,500	148,500	147,500	-5,000	-2,500
	Ames Research Center.....	9,770	9,770	9,770	9,770	---	9,770	9,770	9,770	9,770	---	---
	Goddard Space Flight Center.....	5,640	5,640	5,640	5,640	---	5,640	5,640	5,640	5,640	---	---
	Jet Propulsion Laboratory..	4,630	4,630	4,630	4,630	---	4,630	4,630	4,630	4,630	---	---
	Langley Research Center...	6,500	6,500	6,500	6,500	---	6,500	6,500	6,500	6,500	---	---
	Lewis Research Center....	6,140	6,140	6,140	6,140	---	6,140	6,140	6,140	6,140	---	---
	Large Aeronautical Facilities.....	56,100	56,100	56,100	56,100	---	56,100	56,100	56,100	56,100	---	---
	Space Shuttle Facilities..	31,070	31,070	31,070	31,070	---	18,260	31,070	31,070	31,070	---	---
	Rehabilitation and Mod....	17,800	12,800	17,800	15,300	-2,500	12,800	13,800	13,800	12,800	-5,000	-2,500
	Minor Construction.....	4,200	4,200	4,200	4,200	---	4,200	4,200	4,200	4,200	---	---
	Facility Planning and Design.....	10,650	10,650	10,650	10,650	---	10,650	10,650	10,650	10,650	---	---
	RESEARCH AND PROGRAM MANAGEMENT.....	942,569	939,969	939,969	939,969	-2,600	930,569	937,569	937,569	934,069	-8,500	-5,900
	Basic Submission.....	914,000	914,000	914,000	914,000	---	907,000	914,000	914,000	910,500	-3,500	-3,500
	Rescission.....	-2,400	---	---	---	+2,400	-2,400	-2,400	-2,400	-2,400	---	-2,400
	Supplemental.....	30,969	25,969	25,969	25,969	-5,000	25,969	25,969	25,969	25,969	-5,000	---
	TOTAL, NASA.....	4,585,169	4,626,269	4,599,569	4,612,569	+27,400	4,542,459	4,566,769	4,561,769	4,558,769	-26,400	-53,800

1/ Includes \$30,000,000 to establish a contingency reserve for a potential shortfall in development funding requirements in 1979. (Reserve created by reducing three Space Science projects -- see note on page 3 and Report on page 40.)

2/ Through an amendment on the floor of the Senate, NASA's Research and Development was reduced by \$5,000,000 as part of an overall reduction of \$810,205,000 to programs of certain agencies.

3/ Conferees specified that the general reduction of \$4,500,000 is not to be applied to congressional increases provided in the bill.

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Chronological History of the FY 1979 Budget Submission
(In thousands of dollars)

Subfunction Code

ITEM	AUTHORIZATION					APPROPRIATION					
	NASA Budget Submission	House Comm H.R. 11401 Rep. 95-973 3-15-78 Appd. 4-25-78	Senate Comm H.R. 11401 Rep. 95-799 5-10-78 Appd. 5-18-78	Conf. Comm. Appd. 8-17-78 Rep. 95-1509 P.L. 95-401 Appd. 9-30-78	Difference from Budget Submission	House Comm H.R. 12936 Rep. 95-1255 6-1-78 Appd. 6-19-78	Senate Comm H.R. 12936 Rep. 95-1060 8-1-78	Senate Approved 8-7-78	Conf. Comm. Appd. 9-13-78 Rep. 95-1569 P.L. 95-392 Appd. 9-30-78	Difference From Budget Submission	Difference from Authorization
RESEARCH AND DEVELOPMENT APPROPRIATION:	3,490,100	3,538,800	3,507,100	3,522,600	+32,500	3,477,200	3,480,700	3,475,700 ^{2/}	3,477,200 ^{3/}	-12,900	-45,400
OFFICE OF SPACE TRANSPORTATION SYSTEMS..	2,012,700	2,008,700	2,023,700	2,018,200	+5,500	2,018,200	2,012,000	*	*	*	*
253 Space Shuttle Program....	(1,624,300)	(1,628,300)	(1,628,300)	(1,628,300)	(+4,000)	(1,658,300)	(1,628,300)	(*)	(*)	(*)	(*)
Design, Development, Test and Evaluation:	(985,300)	(985,300)	(985,300)	(985,300)	(---)	(1,015,300) ^{1/}	(985,300)	(*)	(*)	(*)	(*)
Orbiter.....	536,500	536,500	536,500	536,500	---	*	536,500	*	*	*	*
Main Engine.....	176,700	176,700	176,700	176,700	---	*	176,700	*	*	*	*
External Tank.....	80,500	80,500	80,500	80,500	---	*	80,500	*	*	*	*
Solid Rocket Booster....	63,500	63,500	63,500	63,500	---	*	63,500	*	*	*	*
Launch and Landing.....	128,100	128,100	128,100	128,100	---	*	128,100	*	*	*	*
Production:	(454,000)	(458,000)	(458,000)	(458,000)	(+4,000)	(458,000)	(458,000)	(*)	(*)	(*)	(*)
Orbiter.....	397,000	*	*	*	*	*	*	*	*	*	*
Main Engine.....	8,000	*	*	*	*	*	*	*	*	*	*
Launch and Landing.....	11,000	*	*	*	*	*	*	*	*	*	*
Spares and Equipment....	28,000	*	*	*	*	*	*	*	*	*	*
Supplemental Appropriation	(185,000)	(185,000)	(185,000)	(185,000)	(---)	(185,000)	(185,000)	(185,000)	(185,000)	(---)	(---)
253 Space Flight Operations Program.....	(311,900)	(308,900)	(318,900)	(315,900)	(+4,000)	(288,400)	(309,700)	(*)	(*)	(*)	(*)
Space Transportation System Operations	110,500	110,500	110,500	*	*	90,000	109,300	*	*	*	*
Capability Development Development, Test and Mission Operations....	163,000	153,000	163,000	*	*	153,000	160,000	*	*	*	*
Advanced Programs.....	5,000	12,000	12,000	*	*	12,000	7,000	*	*	*	*
Space Transportation Systems Operation....	33,400	33,400	33,400	*	*	33,400	33,400	*	*	*	*
253 Expendable Launch Vehicles	(76,500)	(71,500)	(76,500)	(74,000)	(-2,500)	(71,500)	(74,000)	(*)	(*)	(*)	(*)
Scout.....	16,400	*	16,400	*	*	*	*	*	*	*	*
Centaur.....	21,500	*	21,500	*	*	*	*	*	*	*	*
Delta.....	38,600	*	38,600	*	*	*	*	*	*	*	*
OFFICE OF SPACE SCIENCE...	513,200	513,200	515,200	515,200	(+2,000)	483,200	506,900	*	*	*	*
254 Physics and Astronomy Program.....	(285,500)	(285,500)	(285,500)	(285,500)	(---)	(265,500)	(284,900)	(*)	(*)	(*)	(*)
High Energy Astronomy Observatories.....	11,400	11,400	11,400	11,400	---	11,400	11,400	*	*	*	*
Solar Maximum Mission...	16,200	16,200	16,200	16,200	---	16,200	16,200	*	*	*	*
Space Telescope.....	79,200	79,200	79,200	79,200	---	64,200	79,200	*	*	*	*

*Undistributed.

- 1/ Includes \$30,000,000 to establish a contingency reserve for a potential shortfall in development funding requirements in 1979. Reserve created by reducing Space Telescope \$15,000,000; Jupiter Orbiter Probe \$10,000,000; and Solar Polar Mission \$5,000,000.
- 2/ Through an amendment on the floor of the Senate, NASA's Research and Development was reduced by \$5,000,000 as part of an overall reduction of \$810,205,000 to programs of certain agencies.
- 3/ Conferees specified that the general reduction of \$4,500,000 is not to be applied to congressional increases provided in the bill.

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	OFFICE OF SPACE SCIENCE (Cont'd)											
	Solar Polar Mission....	13,000	13,000	13,000	13,000	---	8,000	13,000	*	*	*	*
	Shuttle/Spacelab Pay- load Development....	38,300	38,300	38,300	38,300	---	38,300	38,300	*	*	*	*
	Explorer Development... Mission Operations and Data Analysis.....	29,800	29,800	29,800	29,800	---	29,800	29,800	*	*	*	*
	Research and Analysis..	32,400	32,400	32,400	32,400	---	32,400	32,400	*	*	*	*
	Suborbital Programs....	35,900	35,900	35,900	35,900	---	35,900	35,300	*	*	*	*
		29,300	29,300	29,300	29,300	---	29,300	29,300	*	*	*	*
254	Lunar and Planetary Exploration Program....	(187,100)	(187,100)	(187,100)	(187,100)	(---)	(177,100)	(181,400)	(*)	(*)	(*)	(*)
	Jupiter Orbiter/Probe.. Mission Operations and Data Analysis.....	78,700	78,700	78,700	78,700	---	68,700	78,700	*	*	*	*
	Research and Analysis..	84,400	84,400	84,400	84,400	---	84,400	78,700	*	*	*	*
254	Life Sciences Program....	(40,600)	(40,600)	(42,600)	(42,600)	(+2,000)	(40,600)	(40,600)	(*)	(*)	(*)	(*)
	Flight Experiments.... Vestibular Function Research.....	12,400	12,400	14,400	14,400	+2,000	12,400	12,400	*	*	*	*
	Research and Analysis..	3,800	3,800	3,800	3,800	---	3,800	3,800	*	*	*	*
		24,400	24,400	24,400	24,400	---	24,400	24,400	*	*	*	*
	OFFICE OF SPACE AND TERRESTRIAL APPLICATIONS	283,400	302,900	283,400	292,400	+9,000	287,400	283,400	*	*	*	*
254	Space Applications.....	(274,300)	(288,300)	(274,300)	(280,300)	(+6,000)	(278,300)	(274,300)	(*)	(*)	(*)	(*)
	Earth Resources Detec- tion and Monitoring..	151,500	165,500	151,500	157,500	+6,000	155,500	151,500	*	*	*	*
	Earth Dynamics Monitor- ing and Forecasting..	8,600	8,600	8,600	8,600	---	8,600	8,600	*	*	*	*
	Ocean Condition Monitor- ing and Forecasting..	12,400	12,400	12,400	12,400	---	12,400	12,400	*	*	*	*
	Environmental Quality Monitoring.....	20,200	20,200	20,200	20,200	---	20,200	20,200	*	*	*	*
	Weather Observation and Forecasting.....	22,800	22,800	22,800	22,800	---	22,800	22,800	*	*	*	*
	Climate Research Pro- gram	12,200	12,200	12,200	12,200	---	12,200	12,200	*	*	*	*
	Materials Processing in Space.....	20,400	20,400	20,400	20,400	---	20,400	20,400	*	*	*	*
	Space Communications...	22,000	22,000	22,000	22,000	---	22,000	22,000	*	*	*	*
	Applications Explorer Missions.....	4,200	4,200	4,200	4,200	---	4,200	4,200	*	*	*	*

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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OFFICE OF SPACE AND TERRESTRIAL APPLICATIONS (Cont'd)												
254 Technology Utilization												
Program.....	(9,100)	(14,600)	(9,100)	(12,100)	(+3,000)	(9,100)	(9,100)	(*)	(*)	(*)	(*)	
Industrial Applications	3,715	5,215	3,715	*	*	3,715	3,715	*	*	*	*	
Technology Applications	4,110	8,110	4,110	*	*	4,115	4,115	*	*	*	*	
Program Control and Evaluation.....	1,275	1,275	1,275	1,275	---	1,275	1,275	*	*	*	*	
OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY.....												
402	375,400	409,600	379,400	391,400	+16,000	385,400	375,400	*	*	*	*	
Aeronautical Research and Technology Program.....	(264,100)	(292,300)	(264,100)	(275,100)	(+11,000)	(271,100)	(264,100)	(*)	(*)	(*)	(*)	
Research and Technology Base.....	109,200	*	109,200	*	*	*	109,200	*	*	*	*	
System Studies.....	3,000	*	3,000	*	*	*	3,000	*	*	*	*	
System Technology Programs.....	85,645	*	85,645	*	*	*	85,645	*	*	*	*	
Experimental Programs..	66,255	*	66,255	*	*	*	66,255	*	*	*	*	
254 Space Research and Technology Program.....	(108,300)	(111,300)	(111,300)	(111,300)	(+3,000)	(108,300)	(108,300)	(*)	(*)	(*)	(*)	
Research and Technology Base.....	71,700	71,700	71,700	71,700	---	71,700	71,700	*	*	*	*	
System Studies.....	2,000	2,000	2,000	2,000	---	2,000	2,000	*	*	*	*	
System Technology Programs.....	7,900	10,900	10,900	10,900	+3,000	7,900	7,900	*	*	*	*	
Experimental Programs..	17,700	17,700	17,700	17,700	---	17,700	17,700	*	*	*	*	
Low Cost Systems Program	9,000	9,000	9,000	9,000	---	9,000	9,000	*	*	*	*	
254 Energy Technology Applications.....	(3,000)	(6,000)	(4,000)	(5,000)	(+2,000)	(6,000)	(3,000)	(*)	(*)	(*)	(*)	
OFFICE OF SPACE TRACKING AND DATA SYSTEMS.....												
255	305,400	304,400	305,400	305,400	---	303,000	303,000	*	*	*	*	
Tracking and Data Acquisition Program.....	(385,400)	(384,400)	(385,400)	(385,400)	(---)	(383,000)	(383,000)	(*)	(*)	(*)	(*)	
Operations.....	254,200	249,200	254,200	254,200	---	*	*	*	*	*	*	
Systems Implementation..	41,300	45,300	41,300	41,300	---	*	*	*	*	*	*	
Advanced Systems.....	9,900	9,900	9,900	9,900	---	*	*	*	*	*	*	

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	CONSTRUCTION OF FACILITIES APPROPRIATION:	152,500	147,500	152,500	150,000	-2,500	134,690	148,500	148,500	147,500	-5,000	-2,500
	AMES RESEARCH CENTER.....	(9,770)	(9,770)	(9,770)	(9,770)	(---)	(9,770)	(9,770)	(9,770)	(9,770)	(---)	(---)
402	R-Modification of Unitary Plan Wind Tunnel.....	5,390	5,390	5,390	5,390	---	5,390	5,390	5,390	5,390	---	---
402	R-Modification of 3.5- Foot Wind Tunnel.....	1,870	1,870	1,870	1,870	---	1,870	1,870	1,870	1,870	---	---
402	*R-Modification of 12- Foot Pressure Wind Tunnel.....	2,510	2,510	2,510	2,510	---	2,510	2,510	2,510	2,510	---	---
	GODDARD SPACE FLIGHT CENTER.....	(5,640)	(5,640)	(5,640)	(5,640)	(---)	(5,640)	(5,640)	(5,640)	(5,640)	(---)	(---)
255	A-Modifications and Additions for Logistic and Supply Functions...	5,640	5,640	5,640	5,640	---	5,640	5,640	5,640	5,640	---	---
	JET PROPULSION LABORATORY.....	(4,630)	(4,630)	(4,630)	(4,630)	(---)	(4,630)	(4,630)	(4,630)	(4,630)	(---)	(---)
255	A-Modifications to Various Buildings for Seismic Protection....	1,570	1,570	1,570	1,570	---	1,570	1,570	1,570	1,570	---	---
255	B-Modifications and Additions to the Space Flight Operations Facility.....	3,060	3,060	3,060	3,060	---	3,060	3,060	3,060	3,060	---	---
	LANGLEY RESEARCH CENTER...	(6,500)	(6,500)	(6,500)	(6,500)	(---)	(6,500)	(6,500)	(6,500)	(6,500)	(---)	(---)
255	A-Modifications for Utility Control System.	1,980	1,980	1,980	1,980	---	1,980	1,980	1,980	1,980	---	---
402	R-Rehabilitation of Unitary Plan Wind Tunnel.....	4,520	4,520	4,520	4,520	---	4,520	4,520	4,520	4,520	---	---
	LEWIS RESEARCH CENTER....	(6,140)	(6,140)	(6,140)	(6,140)	(---)	(6,140)	(6,140)	(6,140)	(6,140)	(---)	(---)
402	R-Construction of Re- search Analysis Center.	6,140	6,140	6,140	6,140	---	6,140	6,140	6,140	6,140	---	---
	LARGE AERONAUTICAL FACILITIES:	(56,100)	(56,100)	(56,100)	(56,100)	(---)	(56,100)	(56,100)	(56,100)	(56,100)	(---)	(---)
402	R-Construction of National Transonic Facility (LaRC).....	24,500	24,500	24,500	24,500	---	24,500	24,500	24,500	24,500	---	---
402	R-Modification of 40-by 80-Foot Subsonic Wind Tunnel (ARC).....	31,600	31,600	31,600	31,600	---	31,600	31,600	31,600	31,600	---	---

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	<u>SPACE SHUTTLE FACILITIES AT VARIOUS LOCATIONS:</u>	(31,070)	(31,070)	(31,070)	(31,070)	---	(18,260)	(31,070)	(31,070)	(31,070)	---	---
253	M-Modifications to Launch Complex 39..... Pad B (KSC).....	13,570	13,570	13,570	13,570	---	760	13,570	13,570	13,570	---	---
253	M-Modifications of Manufacturing, and Final Assembly Facilities for Ex- ternal Tanks (MAF).....	13,980	13,980	13,980	13,980	---	13,980	13,980	13,980	13,980	---	---
253	M-Modifications to Solid Rocket Motor Manu- facturing and Assembly Facilities, Thiokol, Wasatch, Utah.....	1,920	1,920	1,920	1,920	---	1,920	1,920	1,920	1,920	---	---
253	M-Minor Shuttle-Unique Projects.....	1,600	1,600	1,600	1,600	---	1,600	1,600	1,600	1,600	---	---
255	<u>B-REHABILITATION AND MODIFICATION OF FACILITIES.....</u>	(17,800)	(12,800)	(17,800)	(15,300)	(-2,500)	(12,800)	(13,800)	(13,800)	(12,800)	(-5,000)	(-2,500)
255	<u>B-MINOR CONSTRUCTION OF NEW FACILITIES AND ADDITIONS TO EXISTING FACILITIES.....</u>	(4,200)	(4,200)	(4,200)	(4,200)	---	(4,200)	(4,200)	(4,200)	(4,200)	---	---
255	<u>B-FACILITY PLANNING AND DESIGN.....</u>	(10,650)	(10,650)	(10,650)	(10,650)	---	(10,650)	(10,650)	(10,650)	(10,650)	---	---

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RESEARCH AND PROGRAM MANAGEMENT APPROPRIATION												
Basic Submission.....	914,000	914,000	914,000	914,000	---	907,000	914,000	914,000	910,500	-3,500	-3,500	
BY INSTALLATION:												
Johnson Space Center....	150,296	150,296	150,296	150,296	---	*	150,296	150,296	*	*	*	
Kennedy Space Center....	118,431	118,431	118,431	118,431	---	*	118,431	118,431	*	*	*	
Marshall Space Flight Center.....	140,857	140,857	140,857	140,857	---	*	140,857	140,857	*	*	*	
National Space Tech- nology Laboratories... Goddard Space Flight Center.....	3,488	3,488	3,488	3,488	---	*	3,488	3,488	*	*	*	
Wallops Flight Center... Ames Research Center... Dryden Flight Research Center.....	124,139	124,139	124,139	124,139	---	*	124,139	124,139	*	*	*	
Langley Research Center... Lewis Research Center... NASA Headquarters.....	15,205	15,205	15,205	15,205	---	*	15,205	15,205	*	*	*	
	59,212	59,212	59,212	59,212	---	*	59,212	59,212	*	*	*	
	19,481	19,481	19,481	19,481	---	*	19,481	19,481	*	*	*	
	104,579	104,579	104,579	104,579	---	*	104,579	104,579	*	*	*	
	93,780	93,780	93,780	93,780	---	*	93,780	93,780	*	*	*	
	84,532	84,532	84,532	84,532	---	*	84,532	84,532	*	*	*	
BY FUNCTION:												
Personnel.....	695,093	695,093	695,093	695,093	---	*	695,093	695,093	*	*	*	
Travel.....	18,741	18,741	18,741	18,741	---	*	18,741	18,741	*	*	*	
Facilities Services....	102,841	102,841	102,841	102,841	---	*	102,841	102,841	*	*	*	
Technical Services.....	40,357	40,357	40,357	40,357	---	*	40,357	40,357	*	*	*	
Management and Operations Support....	56,968	56,968	56,968	56,968	---	*	56,968	56,968	*	*	*	
RESCISSION.....	-2,400	---	---	---	2,400	-2,400	-2,400	-2,400	-2,400	---	-2,400	
SUPPLEMENTAL APPROPRIATION.....	30,969	25,969	25,969	25,969	-5,000	25,969	25,969	25,969	25,969	-5,000	---	
TOTAL, R&PM.....	942,569	939,969	939,969	939,969	-2,600	930,569	937,569	937,569	934,069	-8,500	-5,900	

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AUTHORIZING APPROPRIATIONS TO THE NATIONAL
 AERONAUTICS AND SPACE ADMINISTRATION

MARCH 15, 1978.—Committed to the Committee of the Whole House on the
 State of the Union and ordered to be printed

Mr. TEAGUE, from the Committee on Science and Technology,
 submitted the following

REPORT
 together with
 ADDITIONAL VIEWS

[To accompany H.R. 11401]

[Including cost estimate and comparison of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 11401) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations to the National Aeronautics and Space Administration for fiscal year 1979 as follows:

Programs	Authorization fiscal year 1979	Page No.
Research and development	\$3, 353, 800, 000	29
Construction of facilities	147, 500, 000	163
Research and program management	914, 000, 000	211
Total	4, 415, 300, 000	

COMMITTEE ACTIONS

RESEARCH AND DEVELOPMENT

SPACE SHUTTLE

NASA requested \$1,439,300,000 for the Space Shuttle in fiscal year 1979. These funds will support the Shuttle design, development, test, and evaluation program and the Shuttle production program for a four orbiter fleet. The Committee believes that there is a requirement for a five orbiter fleet to provide flexibility for exploitation of the orbiter capabilities and to provide a backup for any unforeseen loss of a vehicle. Considerable economy can be realized if production of the fifth orbiter is initiated in fiscal year 1979. Therefore, the Committee recommends the addition of \$4,000,000, for the fifth Orbiter resulting in a total Space Shuttle program authorization of \$1,443,300,000. This action will maintain the option on the fifth Orbiter for another year without incurring any penalty costs.

SPACE FLIGHT OPERATIONS

NASA requested \$311,900,000 for Space Flight Operations programs in fiscal year 1979. Within this line item the Committee decreased Development, Test and Mission Operations \$10,000,000 and increased Advanced Programs \$7,000,000 resulting in a total recommended authorization of \$308,900,000 for Space Flight Operations in fiscal year 1979.

Development, Test and Mission Operations.—NASA requested \$163,000,000 for Development, Test and Mission Operations in fiscal year 1979. It has been the Committee's understanding that the Development, Test and Mission Operations activities would decrease as the Space Transportation Systems Operations Capability activity increased. The Committee reviewed the funding history of the Development, Test and Mission Operations item and found that the fiscal year 1979 estimate is more than the amount funded in fiscal year 1976 whereas the Space Transportation Systems Operations Capability activity has increased from a level of \$11,300,000 in fiscal year 1976 to a request of \$110,500,000 in fiscal year 1979. Therefore, the Committee recommends a total authorization of \$153,000,000 for Development, Test and Mission Operations for fiscal year 1979, a reduction of \$10,000,000 from the NASA request.

Advanced Programs.—NASA requested \$5,000,000 for Advanced Programs in fiscal year 1979. The Committee recommends an addition of \$7,000,000 for Advanced Programs resulting in a total authorization of \$12,000,000 in fiscal year 1979. It has been the position of

the Committee that all reasonable steps should be taken to gain the full potential of practical space application at the earliest possible time. The Committee continues to see a need to conduct studies and investigations to define systems for future missions that will exploit Space Shuttle capabilities in the 1980's. Therefore, the Committee has added funds to augment definition efforts in the areas of space platform; space construction concepts; systems to erect large structures in orbit using the Shuttle; and definition of orbital transfer vehicles required for geosynchronous orbit. Within funds available, NASA is authorized to proceed with definition and development of a 25 Kw power module.

EXPENDABLE LAUNCH VEHICLE PROGRAM

The Committee decreased NASA's Expendable Launch Vehicle Program budget request of \$76,500,000 by \$5,000,000 in recognition of the low level of launch activities for NASA programs in fiscal year 1979 and the opportunities for reducing NASA costs during the phase-out of the Expendable Launch Vehicles program. Therefore, the Committee recommends that a total of \$71,500,000 be authorized for the Expendable Launch Vehicle Program in fiscal year 1979.

SPACE APPLICATIONS

NASA requested \$274,300,000 for Space Applications programs in fiscal year 1979. Within this line item, the Committee increased Earth Resources Detection and Monitoring programs by \$14,000,000 resulting in a total recommended authorization of \$288,300,000 for Space Applications programs in fiscal year 1979.

NASA requested \$151,500,000 for Earth Resources Detection and Monitoring programs in fiscal year 1979. Within this subline item, the Office of Management and Budget reduced NASA's request for application research and technology programs by \$20,700,000. The Committee believes there is a need to augment efforts to transfer this technology to state and private sector users and, therefore, the Committee recommends an increase of \$10,000,000 for applications transfer and demonstration programs, augmentation of support to states, advanced crop prediction, and advanced data analysis techniques. The Committee also recommends an increase of \$4,000,000 to initiate development of Stereosat, a remote sensing satellite that would provide greatly improved geological earth resources data for mineral exploration. In authorizing Stereosat, the Committee insists that NASA establish such mechanisms as may be necessary whereby the industrial community will share in the costs of the program. Therefore, the Committee recommends a total authorization of \$165,500,000 for Earth Resources Detection and Monitoring programs in fiscal year 1979.

TECHNOLOGY UTILIZATION PROGRAM

The Committee increased the Technology Utilization program budget request of \$9,100,000 for fiscal year 1979, by \$5,500,000 in recognition of the Technology Utilization Program's contributions and opportunities for further contributions to the national economy and human benefits.

Within the increase, \$1,500,000 is provided to increase the scope and effectiveness of Industrial Application Centers and other technology dissemination mechanisms, and to continue evaluation of program benefits and appraisal of future opportunities. An additional \$4,000,000 is added to assure that aggressive programs are maintained for transferring NASA technology to bioengineering applications in the areas of materials, human factors engineering and electronics. Therefore, the Committee recommends a total of \$14,600,000 be authorized for the Technology Utilization program for fiscal year 1979.

AERONAUTICAL RESEARCH AND TECHNOLOGY

NASA requested \$264,100,000 for Aeronautical Research and Technology. This amount reflects a reduction, by OMB, of \$26,700,000 from the Composite Primary Aircraft structures program. Because of the potential for significant fuel savings, the Committee feels that any reduction in the program to develop and test new, light-weight materials is short-sighted. Accordingly, the requested amount is increased by \$26,700,000.

The Committee further specifies that NASA should assure that their efforts in this area are fully integrated with those of the Department of Defense and other interested agencies so that common objectives are addressed in a non-duplicative manner.

In addition the Committee adds \$8,000,000 to accelerate the very promising Variable Cycle Engine Components program, and \$4,000,000 to augment the Supersonic Cruise Research program. To accomplish these a corresponding reduction of \$12,000,000 is taken from the near-term components of the Engine Components Improvement program and the Energy Efficiency Transport program. This action reflects the Committee's desire to address an imbalance in NASA's research program that favors the near-term.

The Committee has reviewed NASA's response to the request of last year for a program plan leading to technology readiness for an advanced supersonic transport and has found it unacceptable and unresponsive. Therefore, the Committee requests that NASA redo the plan in accordance with the specifics contained in the report on the Fiscal Year 1978 NASA Authorization bill. The plan should be available for Committee consideration prior to the program review hearings in September 1978.

Although endorsing a modest increase in the research on the well-known problems of supersonic flight, the Committee wishes to stress that no funds are authorized to be appropriated for the construction of a prototype supersonic transport.

An additional \$1,500,000 is added to establish a sub-line item for Aerial Applications Systems Technology for a total authorization for Aeronautical Research and Technology of \$292,300,000 for fiscal year 1979.

SPACE RESEARCH AND TECHNOLOGY

NASA requested \$108,300,000 for Space Research and Technology programs in fiscal year 1979. Within this line item, the Committee increased the Systems Technology programs by \$3,000,000 for power conversion technology, microwave energy technology, and to augment large low density space structure fabrication concepts, fabrication

technology, materials performance verification, and controls studies. Therefore, the Committee recommends a total authorization of \$111,300,000 for Space Research and Technology programs in fiscal year 1979.

ENERGY TECHNOLOGY APPLICATIONS

NASA requested \$3,000,000 for Energy Technology Applications activities in fiscal year 1979. Within this line item, the Committee added \$3,000,000 for Energy from Space/Solar Power Satellite activities resulting in a total recommended authorization of \$6,000,000 for Energy Technology Applications in fiscal year 1979.

NASA stated that its efforts in support of energy from space would be funded by the Department of Energy in fiscal year 1979. However, the presently agreed on NASA/DOE Solar Power Satellite plans do not include any space related technology effort. The Committee feels strongly that space related technological effort is needed for power conversion technology to develop thin/lightweight, high efficiency, radiation resistant, solar cells of silicon, gallium arsenide, and alternative materials and for microwave energy technology in areas of direct current-to-microwave energy conversion, microwave beam forming, construction of receiving-and-rectifying antenna, radio frequency interference, and interactions of microwave beams with the ionosphere. Without this necessary space related technology, the economic and environmental issues will remain unresolved.

TRACKING AND DATA ACQUISITION

The Committee decreased the Tracking and Data Acquisition Program budget request of \$305,400,000 for fiscal year 1979 by \$1,000,000. The net reduction includes a \$4,000,000 increase for data processing implementation and a \$5,000,000 decrease for Operations.

The \$4,000,000 addition provides funding to initiate development and equipping of a new data processing center for operation in the latter part of 1981 meeting requirements of Spacelab missions which exceed by a factor of ten or more the data processing capability of existing facilities at the Goddard Space Flight Center. Additional funding will be required in subsequent authorizations to fully realize the total system. If partial funding were deferred to fiscal year 1980, the center would not be available until the latter part of 1982, extending the severe data constraints imposed on the first three Spacelab missions for two years, impacting experiment selection, and compromising the effectiveness of Spacelab missions. The \$5,000,000 decrease for Operations is in the Committee's recognition of the need for NASA to take full advantage of cost reduction opportunities within projected workloads to off-set worldwide escalation in operating costs. Therefore, the Committee recommends that a total of \$304,400,000 be authorized for Tracking and Data Acquisition in fiscal year 1979.

CONSTRUCTION OF FACILITIES

NASA requested \$152,500,000 for Construction of Facilities in fiscal year 1979. The Committee reduced the request for the Rehabilitation and Modification of Facilities program by \$5,000,000, resulting in a

total recommended authorization of \$147,500,000 for Construction of Facilities in fiscal year 1979.

NASA requested \$17,800,000 for Rehabilitation and Modification of Facilities programs. The Committee recognizes the continuing need to maintain existing institutional and service facilities and to protect past investments in property. The Committee also recognizes, however, that several projects requested by NASA do not appear to be high priority for fiscal year 1979 authorization. Therefore, the Committee recommends a reduction of \$5,000,000, resulting in a total recommended authorization of \$12,800,000 for Rehabilitation and Modification of Facilities programs in fiscal year 1979.

LANGUAGE AMENDMENTS

Section 6

The Committee changed subsection lettering of Section 203 of the National Aeronautics and Space Act of 1958, as amended, in order to provide a consistent lettering system and correct mislettering which resulted from enactment of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976, Public Law 94-413.

Section 7

The Committee amended Section 102 and Section 203 of the National Aeronautics and Space Act of 1958 directing NASA to apply its expertise in science, engineering and administration of complex interdisciplinary research and development programs to initiate, support and carry out research, development, demonstration, and other related activities in bioengineering to assist handicapped individuals and lessen or alleviate the problems caused by disability.

COMMITTEE VIEWS

FUTURE SPACE PROGRAMS

The Committee views with increasing concern the apparent lack of interest of the Executive Branch in consistent and continuing future planning for a strong National Space Program as reflected by the budget submission for fiscal year 1979. If our Nation is to realize the full potential of the abundant applications of space science and technology, the planning for future programs must necessarily receive consistent funding and NASA management's enthusiastic support. Such planning must then be followed with sufficient new NASA programs to sustain the space scientific and technological base while supporting those practical applications demonstrated to be significant to the needs of our society. The Committee questions the basis for the current NASA "institutional review" as confusing the means with the ends, therefore, potentially lacking in an adequate evaluation of the benefits derived from our space program and consequently underestimating the size, nature, and structure of the future NASA institution best serving the broadest interests of the Nation. Therefore, the Committee insists that NASA, during the next year, inform the Committee at least quarterly as to what actions may be planned or underway to strengthen future peaceful space program planning and recommend a mechanism by which the Executive Branch will assure a full and adequate dialogue before any actions are taken with respect to the current NASA "institutional review."

The Committee further observes that in consonance with the National Aeronautics and Space Act of 1958, NASA should take the initiative in cooperation with other cognizant agencies of the Executive branch, to promote, encourage and otherwise strengthen the commitment of the signatory Nations to the Outer Space Treaty.¹

RESEARCH AND ANALYSIS

The Committee is concerned with the level of support for Research and Analysis and the essentially constant level of University funding. The Committee believes that NASA should continue a vigorous program in Upper Atmospheric research to study processes affecting the filtering of harmful solar radiation and coupling phenomena which may affect the ability to develop an understanding and prediction capability in the areas of weather and climate. In addition, the Committee shares the view of the Space Science Board of the National Academy of Science that the lack of anticipatory concepts and instrumentation

¹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies.

development will undermine future Space Science Programs constraining NASA from studying all highly desirable options. The Committee, therefore, recommends that NASA provide additional emphasis on Research and Analysis, seek ways to further broaden and strengthen its upper atmospheric research program, and assure Universities an expanding role in these areas.

LUNAR EXPLORATION

The Committee believes that further exploration of the moon should be predicated on more than its relative scientific merit since the continued and detailed study of the moon is of unique interest due to its proximity to earth and potential for future applications providing opportunities to capitalize on our present data and understanding for relatively low additional cost. The Committee urges NASA to again consider in subsequent budgets an automated polar orbiting mission to the moon that will obtain global measurements of the moon's chemistry and mineral distribution as well as other general properties and provide unique opportunities to correlate remote sensing and "ground truth" data for resource analysis and calibration of instrumentation to accommodate future planetary missions. Such consideration should not necessarily place the Lunar Polar Orbiter mission in competition with only scientific satellites but also should be evaluated as a program with the potential for long term beneficial uses.

LAUNCH VEHICLE REIMBURSEMENT POLICY

NASA is the lead agency for the launching of civilian payloads into space. Cost reimbursement is required when launches are conducted for the benefit of other government agencies, foreign countries and commercial firms. The amount of reimbursement in each case depends on the kind of customer. When other government agencies are involved, NASA seeks to recover only those costs that are over and above their costs for launching NASA payloads. For example, the salaries of NASA civil service employees who conduct a NOAA or DOD launch are not recovered. The underlying assumption in this approach is that NASA will have a sufficient in-house business base to justify a launch vehicle program. However, as the expendable vehicles are phased out, this assumption is becoming weaker.

Therefore, the Committee requests NASA to reevaluate the reimbursement policy for expendable launch vehicles and to report their findings by June 1978.

LIFE SCIENCES SPACELAB MISSIONS

Life Sciences flight experiments in biomedicine, biology and life support in the near weightlessness of earth orbit provide one of the major uses for the pressurized Spacelab flown on Space Shuttle missions. It is imperative that full advantage be taken of this new space transportation system in an aggressive, orderly and coordinated Life Sciences flight experiment program involving broad participation from the scientific and industrial communities. NASA, therefore, should assure sufficient effort so that the Life Sciences Program is consistent with maintaining commitments to an effective Spacelab/Shuttle launch schedule.

SPACE APPLICATIONS

The Committee notes a reduction in the funds to support technology transfer and demonstration projects and an increased emphasis on the scientific content of the applications programs. While the Committee recognizes the need for a sound science base for space applications, there is a need for more support for technology transfer and demonstration projects to increase the number of users and hasten the transition from experimental to operational programs. Therefore, the Committee recommends that NASA evaluate what strategies and programs are necessary to strengthen user oriented programs at all levels and advise the Committee prior to the next annual authorization what steps need to be taken to meet this objective.

NASA SATELLITE TECHNOLOGY FOR REMOTE SENSING FOR DEVELOPING COUNTRIES

The Committee views the United States' capability to monitor and sense the earth's resources and environmental quality with satellite technology as unparalleled throughout the world. Furthermore, these capabilities are, and will continue to rapidly improve.

This preeminent position is a source of international responsibility, as well as national pride. Since the U.S. satellite program collects data from the entire globe it is in a unique position to meet the needs of the world's developing countries with respect to resource and environmental sensing and communications. To passively respond to these needs would eventually lead to political difficulties with the developing nations similar to those experienced in the Law of the Sea controversy in which the U.S. was viewed as dominating development of the oceans' resources due to its scientific and technological superiority. The National Academy of Science states,¹ "If the operation of a global remote sensing activity is to be politically acceptable, some type of international framework would seem to be required. The need for this is supported by several factors: the global character of the technology; its capacity to serve transnational objectives; the desirability of allaying national fears and concerns; the advantages of a cooperative, participatory approach as opposed to one characterized by either dependence or potential rivalry; and the increasing sense—both in the United States and in the international community—that activities in the common domain of humanity, such as the oceans and space, require some form of accountability to an international entity."

The Committee further believes that it would not only be politically desirable but also consistent with the national objective of more harmonious international relations and Third World development to assist these countries in developing a global user plan for satellite technology. Again citing the National Academy of Science study, "It (the U.S.) has a proclaimed policy of sharing its science and technology with the poor countries to promote their development. As the innovator of global resource sensing from space and at present the sole source of satellite data, it has an exceptional opportunity to give practical expression to this policy by enabling interested countries to make effective use of the data."

¹ "Resource Sensing From Space—Prospects for Developing Countries—1977".

The Committee, therefore, requests that the National Aeronautics and Space Administration develop a 5 and 10 year plan of technology transfer that would optimize global capability to use satellite technology and data. The Committee requests that the NASA begin such a plan by preparing an outline, or preliminary plan, of how it would attempt to implement these committee views and the recommendations of the National Academy of Science study previously mentioned. The NASA should submit the report to this committee no later than September 1, 1978.

NASA TECHNOLOGY TRANSFER

The Committee believes that many of the nation's scientific and technology problems—such as air and water pollution, chemical threats to health, highway and occupational safety, and energy supply—cut across several disciplines. The Committee also believes that increased utilization of the Nation's Federal laboratory network in responding to the technological challenges and needs of the states and local communities should be vigorously pursued.

The Committee further believes that the national laboratory network should set two specific goals to meet these two beliefs. In order for the nation to meet the challenge of cross-cutting problems, a goal of the national laboratory network should be to vigorously increase its ability to transfer ideas, technology, and personnel among the individual laboratories; partly through cooperation and coordination of the efforts of the several mission agencies. To insure that federally developed technology and federal scientific, engineering, and technologic expertise are of the broadest benefit to the security and well being of the nation, those federal agencies which operate research and development laboratories should strive to initiate or improve programs to further the goal of transferring such resources to state and local community agencies and offices; part of this goal should consider the active outreach to these potential users.

The Committee recognizes and commends NASA on their technology transfer efforts in the areas of Technology Utilization and Space Applications. The Committee further encourages NASA to augment these efforts to the accomplishment of the broader national goals.

SEASAT PROGRAM FOLLOW-ON

The Committee is concerned that NASA did not request funds to initiate a follow-on SEASAT program in fiscal year 1979. The Committee considers the follow-on SEASAT to be a high priority program. Therefore, the Committee urges NASA to play a leadership role in resolving the institutional issues involved in a follow-on SEASAT program and to plan and propose a program for the next authorization which resolves current issues.

WEATHER OBSERVATION AND FORECASTING

The Committee has been very supportive of this program and its general objectives. Society, since the beginning of mankind, has been at the mercy of natural weather phenomena. The space age technology has presented a new hope for being able to predict and even control many of these phenomena.

It is the view of the Committee that progress in this program is being limited because of a lack of well defined goals, both as to objectives and schedule, which would allow for higher visibility and better opportunity to measure progress.

The Committee does recognize, though, that NASA is taking action, such as moving overall program direction and coordination to headquarters, which will help to alleviate this situation. The Committee also recognizes the significance of the Global Atmospheric Research Program and the impact it may have upon the overall program and is looking forward to seeing the results of that program and its influence on the total weather program during next year's authorization hearings.

SPACE COMMUNICATIONS RESEARCH AND DEVELOPMENT

The Committee observes that the Nation's space telecommunications industry is facing increasing foreign competition. A major question exists as to whether the communications satellite industry can maintain the technical superiority of the United States without NASA as a source of research and development support in high risk areas of technology.

The Committee urges NASA to carefully consider its future role in communications satellite research and development and make recommendations to the Congress as to the future role of NASA at the earliest possible time. Such recommendations should carefully evaluate how NASA perceives its role relative to other agencies of government as well as the private sector.

SPACE PROCESSING

The Committee recognizes the potential large positive contribution to the Nation's economy from the manufacture in space of new and better products. There are many material processes which benefit from the near zero gravity, hard vacuum environment of space.

The Committee commends the National Aeronautics and Space Administration for recognizing materials processing in space as a forward looking activity which will help bring benefits to a broad segment of the entire public and urges increased efforts in ground based and rocket-borne research activity prior to the availability of the Space Shuttle. The Committee further recommends that NASA investigate all possible ways including new financial and technical mechanisms to bring greater emphasis to this important area of future space commerce.

BIOENGINEERING APPLICATIONS

NASA has challenged some of our nation's best minds in meeting the demands of its space programs. These programs have produced unique achievements in technology at the cutting edge of understanding in human and machine relationships and interactions. It is the view of the Committee that NASA should take every reasonable opportunity both unilaterally and in concert with other agencies to assure that this technology is not only made available for public access but is transformed into useful applications. This extra step in apply-

ing engineering principles to problems of biomedicine and rehabilitation affecting large numbers of people in this nation provides a focus for compiling and coordinating the necessary technology for proof of concept development. NASA, therefore, should apply its technology utilization capabilities to assure a maximum return from these technologies most applicable to bioengineering.

AERONAUTICAL PROGRAM BALANCE

The Committee has long been concerned about the balance within the aeronautics program. This concern is centered both on the balance between near- and far-term applications and among the categories of work directed at particular vehicle classes.

The budget request for research and technology base activities, which are long-term in outlook contains an increase of 10.7% for Fiscal Year 1979. This amounts to very little more than compensation for inflation. Yet other areas with a much more near-term focus received substantially greater growth, such as the Aircraft Energy Efficiency program with 38.7%.

Balance among vehicle classes is also important. Work on conventional take-off and landing aircraft receives 51% of the aeronautics budget. General aviation, on the other hand, receives 4%; and hypersonic research 1%.

Considering this, the Committee asks NASA to carefully reevaluate the program balance in aeronautics and to make appropriate adjustments in the Fiscal Year 1980 budget request.

ENERGY RESEARCH AND DEVELOPMENT

The Committee observes that in the continuing energy crisis all potential energy sources should be thoroughly evaluated to determine their value to the Nation. The Committee further observes that solar satellite power represents one of the potentially most promising sources of energy and that NASA expertise and facilities need to be used to the fullest extent possible to assure that this technology is evaluated. The Committee is encouraged by the joint Department of Energy/NASA program for solar power satellite studies related to system definition, environmental issues, and economic issues. However, there is continued concern over the lack of funds for the necessary technology development to resolve these issues. Therefore, the Committee urges that the President and responsible energy authorities within the executive branch encourage the use of NASA expertise and facilities by:

- (a) Allocating sufficient funds to the National Aeronautics and Space Administration for verification of the technology essential to solar satellite power demonstration, and
- (b) Reviewing the existing National Aeronautics and Space Administration facilities and equipments complement to assure that these National assets are employed in solution of our energy problems.

ENERGY TECHNOLOGY IDENTIFICATION AND VERIFICATION

The Committee is pleased that the reimbursable energy technology responsibilities assigned to NASA continue to increase. The Committee believes that the funds being devoted to this area are being effec-

tively used and continue to be necessary to most effectively assure that the capabilities of the agency are focused on energy problems in support of the Department of Energy. However, the Committee notes a substantial opportunity exists to expand this activity and encourages the Department of Energy to do so.

CONSTRUCTION OF FACILITIES

The Committee questions the Construction of Facilities project for Modification and Additions for Logistics and Supply Functions, Goddard Space Flight Center. Since the Committee has previously authorized funds for converting a warehouse (Building 16) to office space, there is concern about changing this facility back to a warehouse.

The Committee recommends that NASA review the long-range needs for warehouse space and office space at Goddard Space Flight Center to assure the efficient use of funds.

PROJECT MANAGEMENT

The Committee report on NASA Program Planning and Control identified the development activity as the largest single user of financial and manpower resources. The report further found great variability among large development projects as to the number of "in-house" people required to manage them. Upon further investigation, the Committee finds that there are a variety of factors that affect project manpower levels. Most obvious among these is whether a substantial portion of the work is done "in-house" or is contracted to a private firm. But other factors can contribute to management complexity. Some of these are: the involvement of several associate contractors, the involvement of principal investigators, the type of contract used, the existence of multiple external relationships and management philosophy.

Nevertheless, the Committee is concerned that some NASA project offices perform tasks, involving detailed contractor oversight or record keeping, that are either redundant or actually unnecessary to effective project management. This concern is increased in the light of recent personnel reductions that have forced NASA to cut back or, in some cases, eliminate high value research and development programs.

Therefore, the Committee requests the Administrator of NASA to review project management practices with an eye toward:

1. streamlining the functions performed by current project offices, and
2. developing guidance for future projects.

Such findings and recommendations as are resultant from this review should be available for Committee consideration during program review hearings in September 1978.

EXPLANATION OF THE BILL

RESEARCH AND DEVELOPMENT

SUMMARY

Programs	Authorization fiscal year 1979	Page No.
1. Space Shuttle	\$1, 443, 300, 000	29
2. Space flight operations.....	308, 900, 000	38
3. Expendable launch vehicles.....	71, 500, 000	49
4. Physics and astronomy.....	285, 500, 000	51
5. Lunar and planetary exploration.....	187, 100, 000	65
6. Life sciences.....	40, 600, 000	74
7. Space applications.....	288, 300, 000	76
8. Technology utilization.....	14, 600, 000	113
9. Aeronautical research and technology.....	292, 300, 000	114
10. Space research and technology.....	111, 300, 000	137
11. Energy technology applications.....	6, 000, 000	150
12. Tracking and data acquisition.....	304, 400, 000	150
Total.....	3, 353, 800, 000	

CONSTRUCTION OF FACILITIES

SUMMARY

Projects	Authorization	Page No.
1. Modification of unitary plan wind tunnel, Ames Research Center.....	\$5, 390, 000	164
2. Modification of 3.5-ft wind tunnel, Ames Research Center.....	1, 870, 000	164
3. Modification of 12-ft pressure wind tunnel, Ames Research Center.....	2, 510, 000	165
4. Modifications and additions for logistic and supply functions, Goddard Space Flight Center.....	5, 640, 000	165
5. Modifications to various buildings for seismic protection, Jet Propulsion Laboratory.....	1, 570, 000	166
6. Modifications and addition to the space flight operations facility, Jet Propulsion Laboratory.....	3, 060, 000	167

7. Modifications for utility control system, Langley Research Center.....	1, 980, 000	167
8. Rehabilitation of unitary plan wind tunnel, Langley Research Center.....	4, 520, 000	168
9. Construction of research analysis center, Lewis Research Center.....	6, 140, 000	169
10. Construction of large aeronautical facilities.....	(56, 100, 000)	169
A. Construction of national transonic facility, Langley Research Center.....	24, 500, 000	169
B. Modification of 40- by 80-ft subsonic wind tunnel, Ames Research Center.....	31, 600, 000	170
11. Space Shuttle facilities, various locations.....	(31, 070, 000)	171
A. Modifications to launch complex 39, Kennedy Space Center.....	13, 570, 000	171
B. Modifications of manufacturing and final assembly facilities for external tanks, Michoud Manufacturing assembly facility.....	13, 980, 000	172
C. Modifications for solid rocket motor manufacturing and assembly facilities, Thiokol Plant, Wasatch, Utah.....	1, 920, 000	173
D. Minor shuttle—unique projects, various locations.....	1, 600, 000	173
12. Rehabilitation and modification of facilities not in excess of \$500,000 per project, various locations.....	12, 800, 000	175
13. Minor construction of new facilities and additions to existing facilities, not in excess of \$250,000 per project.....	4, 200, 000	198
14. Facility planning and design not otherwise provided for.....	10, 650, 000	207
Total.....	147, 500, 000	

RESEARCH AND PROGRAM MANAGEMENT

The Research and Program Management appropriation provides for: (1) the civil service staff comprising the direct civil service personnel needed to perform in-house research, technology, and test activities; and the personnel needed to plan, manage, and support the Research and Development programs; and (2) the other elements of operational capability of the laboratories and facilities. Over three-fourths of this appropriation is required to cover salaries and benefits of civil service employees. The balance is required for essential travel, facilities services, technical services, and management and operations support of all NASA installations.

Each center has been assigned certain principal roles of fundamental importance in meeting the agency's overall program goals. These principal roles reflect the intrinsic competence of the centers on the basis of demonstrated capabilities. The fiscal year 1979 budget provides the resources necessary to maintain the capabilities and apply them to the appropriate program activities.

SUMMARY OF BUDGET PLAN BY INSTALLATION

(In thousands of dollars)

	1978			1979 budget estimate
	1977 actual	Budget estimate	Current estimate	
Johnson Space Center.....	139, 488	139, 581	145, 875	150, 296
Kennedy Space Center.....	109, 742	110, 141	112, 549	118, 431
Marshall Space Flight Center.....	139, 417	134, 693	141, 485	150, 857
National Space Technology Laboratories.....	1, 840	1, 942	2, 764	3, 488
Goddard Space Flight Center.....	114, 874	116, 133	122, 247	124, 139
Wallops Flight Center.....	13, 268	14, 226	14, 539	15, 205
Ames Research Center.....	53, 265	53, 706	58, 373	59, 212
Dryden Flight Research Center.....	17, 333	17, 034	18, 727	19, 481
Langley Research Center.....	95, 597	95, 411	102, 589	104, 579
Lewis Research Center.....	83, 818	88, 706	90, 761	93, 780
Headquarters.....	75, 719	75, 416	80, 291	84, 532
Total.....	844, 361	846, 989	890, 200	914, 000

SUMMARY OF BUDGET PLAN BY FUNCTION

(In thousands of dollars)

	1978			1979 budget estimate
	1977 actual	Budget estimate	Current estimate	
Personal and related costs.....	645, 158	649, 104	646, 104	695, 083
Supplemental requested for civilian pay increase.....			46, 200	
Travel.....	16, 683	17, 846	17, 566	18, 741
Facilities services.....	90, 112	89, 758	91, 244	102, 841
Technical services.....	40, 036	36, 915	36, 160	40, 357
Management and operations support.....	52, 372	53, 366	52, 926	56, 968
Total.....	844, 361	846, 989	890, 200	914, 000

SECTIONAL ANALYSIS

A BILL To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes

Section 1

Subsections (a), (b), and (c) would authorize to be appropriated to the National Aeronautics and Space Administration funds, in the total amount of \$4,415,300,000, as follows: (a) for "Research and development," a total of program line items aggregating the sum of \$3,353,800,000; (b) for "Construction of facilities," a total of 14 line items aggregating the sum of \$147,500,000; and (c) for "Research and program management," \$914,000,000. Subsection (c) would also authorize to be appropriated such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

Subsection 1(d) would authorize the use of appropriations for "Research and development" without regard to the provisions of subsection 1(g) for: (1) items of a capital nature (other than the acquisition of land) required at locations other than NASA installations for the performance of research and development contracts; and (2) grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities. Title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Moreover, each such grant shall be made under such conditions as the Administrator shall find necessary to insure that the United States will receive benefit therefrom adequate to justify the making of that grant.

In either case no funds may be used for the construction of a facility in accordance with this subsection, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator notifies the Speaker of the House, the President of the Senate and the specified committees of the Congress of the nature, location, and estimated cost of such facility.

Subsection 1(e) would provide that, when so specified and to the extent provided in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) contracts for maintenance and operation of facilities, and support services may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

Subsection 1(f) would authorize the use of not to exceed \$25,000 of the "Research and program management" appropriation for scientific consultations or extraordinary expenses, including representation and official entertainment expenses, upon the authority of the Administrator, whose determination shall be final and conclusive.

Subsection 1(g) would provide that of the funds appropriated for "Research and development" and "Research and program management," not in excess of \$25,000 per project (including collateral equip-

ment) may be used for construction of new, or additions to existing facilities, and not in excess of \$50,000 per project (including collateral equipment) may be used for rehabilitation or modification of existing facilities; however, of the funds appropriated for "Research and development," not in excess of \$250,000 per project (including collateral equipment) may be used for construction of new facilities or additions to, or rehabilitation or modification of, existing facilities required for unforeseen programmatic needs.

Section 2

Section 2 would authorize upward variations of the sums authorized for the "Construction of facilities" line items (other than facility planning and design) of 10 per centum at the discretion of the Administrator or his designee, or 25 per centum following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, for the purpose of meeting unusual cost variations. However, the total cost of all work authorized under these line items may not exceed the total sum authorized for "Construction of facilities" under subsection 1(b), paragraphs (1) through (13).

Section 3

Section 3 would provide that not more than one-half of 1 per centum of the funds appropriated for "Research and development" may be transferred to the "Construction of facilities" appropriation and, when so transferred, together with \$10,000,000 of the funds appropriated for "Construction of facilities," shall be available for the construction of facilities and land acquisition at any location if the Administrator determines (1) that such action is necessary because of changes in the aeronautical and space program or new scientific or engineering developments, and (2) that deferral of such action until the next authorization Act is enacted would be inconsistent with the interest of the Nation in aeronautical and space activities. However, no such funds may be obligated until 30 days have passed after the Administrator or his designee has transmitted to the Speaker of the House, the President of the Senate and the specified committees of Congress a written report containing a description of the project, its cost, and the reason why such project is necessary in the national interest, or each such committee before the expiration of such 30-day period has notified the Administrator that no objection to the proposed action will be made.

Section 4

Section 4 would provide that, notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation;

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c); and,

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House, the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Section 5

Section 5 would express the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Section 6

Section 6 would amend the National Aeronautics and Space Act, as amended, to provide a consistent lettering system and correct mislettering which resulted from enactment of Public Law 94-413.

Section 7

Section 7 would amend the National Aeronautics and Space Act of 1958 directing NASA to apply its expertise in science, engineering and administration of complex interdisciplinary research and development programs to initiate, support and carry out research, development, demonstration, and other related activities in bioengineering to assist handicapped individuals and lessen or alleviate the problems caused by disability.

Section 8

Section 8 would provide that the Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1979".

COST AND BUDGET DATA

The bill will authorize appropriations for Fiscal Year 1979 in the amount of \$4,415,300,000. In accordance with the requirements of section 252(b) of the Legislative Reorganization Act of 1970, the Committee's estimate for the next five years of the NASA budget request is as follows:

Fiscal year—	
1979-----	4,415,300,000
1980-----	4,722,200,000
1981-----	4,410,600,000
1982-----	3,724,200,000
1983-----	3,400,400,000

These estimates do not include provisions for any new program or program augmentations that may be recommended, nor do they include any provisions for administrative adjustments that may be required.

EFFECT OF LEGISLATION ON INFLATION

In accordance with Rule XI, Clause 2(1)(4) of the Rules of the House of Representatives this legislation is assessed to have no adverse inflationary effect on prices and costs in the operation of the national economy. NASA expenditures are labor intensive with approximately 85 percent of spending directly for jobs and the remainder for materials. There is now underemployment and unused plant capacity in the aerospace industry; therefore, these expenditures will not be inflationary.

The long run economic effect of NASA expenditures is to increase productivity, both through direct application of aeronautical and space technology (as demonstrated by communications satellites, improved aircraft and other innovations) and indirectly through the development and dissemination of advanced technology which is then applied in many other sectors of the economy.

Studies by the Midwest Research Institute and by Chase Econometrics, Inc. have shown the average rate of return for NASA high technology expenditures to be in the range of 32 to 36 percent per year or a return of \$7 for every \$1 of NASA expenditure over a period of years.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are as follows (existing law proposed to be omitted is enclosed in black brackets new matter is printed in italic, existing law in which no change is proposed is shown in roman: and large unchanged blocks of existing law is indicated by * * *).

National Aeronautics and Space Act of 1958, as amended:

* * * * *

DECLARATION OF POLICY AND PURPOSES

Sec. 102. (a) The Congress hereby declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind.

(b) The Congress declares that the general welfare and security of the United States require that adequate provision be made for aeronautical and space activities. The Congress further declares that such activities shall be the responsibility of, and shall be directed by, a civilian agency exercising control over aeronautical and space activities sponsored by the United States, except that activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States (including the research and development necessary to make effective provision for the defense of the United States) shall be the responsibility of, and shall be directed by, the Department of Defense; and that determination as to which such agency has responsibility for and direction of any such activity shall be made by the President in conformity with section 201(e).

(c) The aeronautical and space activities of the United States shall be conducted so as to contribute materially to one or more of the following objectives:

(1) The expansion of human knowledge of phenomena in the atmosphere and space;

(2) The improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles;

(3) The development and operation of vehicles capable of carrying instruments, equipment, supplies, and living organisms through space;

(4) The establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes;

(5) The preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere;

(6) The making available to agencies directly concerned with national defense of discoveries that have military value or significance and the furnishing by such agencies, to the civilian agency established to direct and control nonmilitary aeronautical and space activities, of information as to discoveries which have value or significance to that agency;

(7) Cooperation by the United States with other nations and groups of nations in work done pursuant to this Act and in the peaceful application of the results thereof; and

(8) The most effective utilization of the scientific and engineering resources of the United States, with close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment.

(d) The Congress declares that the general welfare of the United States requires that the unique competence in scientific and engineering systems of the National Aeronautics and Space Administration also be directed toward ground propulsion systems research and development. Such development shall be conducted so as to contribute to the objectives of developing energy- and petroleum-conserving ground propulsion systems, and of minimizing the environmental degradation caused by such systems.

(e) The Congress declares that the general welfare of the United States requires that the unique competence in scientific and engineering systems of the National Aeronautics and Space Administration also be directed toward the development of advanced automobile propulsion systems. Such development shall be conducted so as to contribute to the development shall be conducted so as to contribute to the achievement of the purposes set forth in section 302(b) of the Automotive Propulsion Research and Development Act of 1977.

(f) The Congress declares that the general welfare of the United States requires that the unique competence of the National Aeronautics and Space Administration in science and engineering systems and in the administration of complete interdisciplinary research and development programs be directed toward bioengineering research,

development, and demonstration programs. Such programs shall be conducted to alleviate and minimize the effects of disability.

[(f)] (g) It is the purpose of this Act to carry out and effectuate the policies declared in subsections (a), (b), (c), (d), [and (e)] (e), and (f).

FUNCTIONS OF THE ADMINISTRATION

SEC. 203. (a) The Administration, in order to carry out the purpose of this Act, shall—

(1) plan, direct, and conduct aeronautical and space activities;

(2) arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations; and

(3) provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.

[(b)] (b) (1) The Administration shall, to the extent of appropriated funds, initiate, support, and carry out such research, development, demonstration, and other related activities in ground propulsion technologies as are provided for in sections 4 through 10 of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976;

[(c)] (2) The Administration shall initiate, support, and carry out such research, development, demonstrations, and other related activities in solar heating and cooling technologies (to the extent that funds are appropriated therefor) as are provided for in sections 5, 6, and 9 of the Solar Heating and Cooling Demonstration Act of 1974;

(3) *The Administration shall initiate, support, and carry out research, development, demonstrations, and other related activities, to the extent funds are appropriated therefor, in bioengineering (including but not limited to materials, human factors engineering, electronics and automated systems) to assist handicapped individuals and lessen or alleviate the problems caused by disability. To the extent appropriate, these bioengineering research, development and demonstration programs shall be conducted in coordination and cooperation with other related Federal agency programs.*

CONGRESSIONAL BUDGET ACT INFORMATION

No information pursuant to section 308(a) of the Congressional Budget Act of 1974 has been provided to the committee by the Congressional Budget Office. Under a separate section of this report, a five-year current programs cost estimate is provided in response to the requirement of section 308(a). No funds for State or local financial assistance are included in H.R. 11401

ESTIMATE AND COMPARISON, CONGRESSIONAL BUDGET OFFICE

Pursuant to clause (2)(1)(3)(C) of rule XI of the Rules of the House of Representatives the report of the Congressional Budget Office is included.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

1. Bill No.: H.R. 11401.
2. Bill title: National Aeronautics and Space Administration Authorization Act, 1979.
3. Bill status: As ordered reported by the House Committee on Science and Technology, March 14, 1978.
4. Bill purpose: This bill authorizes appropriations for the National Aeronautics and Space Administration for fiscal year 1979.
5. Cost estimate:

	(In millions of dollars)				
	Fiscal year—				
	1979	1980	1981	1982	1983
Authorization level:					
Function 250.....	3,865.3				
Function 400.....	556.0				
Total.....	4,415.3				
Estimated cost:					
Function 250.....	2,935.3	769.0	150.6	8.7	1.7
Function 400.....	302.8	178.8	42.3	18.5	7.6
Total.....	3,238.1	947.8	192.9	27.2	9.3

6. Basis of estimate: The authorization level is that stated in the bill. All funds authorized are assumed to be appropriated. Estimated annual costs are based on the historical spendout patterns of the major programs.

7. Estimate comparison: None.
8. Previous CBO estimate: None.

OVERSIGHT FINDINGS AND RECOMMENDATIONS, COMMITTEE ON GOVERNMENT OPERATIONS

No findings or recommendations on oversight activity pursuant to clause 2(b)(2), rule X, and clause 2(l)(3)(D), rule XI, of the Rules of the House of Representatives have been submitted by the Committee on Government Operations for inclusion in this report.

COMMITTEE RECOMMENDATION

A quorum being present, the Committee unanimously approved the bill by roll call vote (31-0) of those present.

NASA RECOMMENDATION

This is a National Aeronautics and Space Administration legislation item approved with the exceptions noted in this report by the Office of Management and Budget, as indicated by the following letter:

NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION,
Washington, D.C., January 23, 1978.

HON. THOMAS P. O'NEILL, Jr.,
Speaker of the House of Representatives, Washington, D.C.

DEAR MR. SPEAKER: Submitted herewith is a draft of a bill, "to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes," together with the sectional analysis thereof. It is submitted to the Speaker of the House of Representatives pursuant to Rule XL of the House.

Section 4 of the Act of June 15, 1959, 73 Stat. 75 (42 U.S.C. 2460), provides that no appropriation may be made to the National Aeronautics and Space Administration unless previously authorized by legislation. It is a purpose of the enclosed bill to provide such requisite authorization in the amounts and for the purposes recommended by the President in the Budget of the United States Government for fiscal year 1979. For that fiscal year, the bill would authorize appropriations totaling \$4,371,600,000 to be made to the National Aeronautics and Space Administration as follows:

- (1) for "Research and development" amounts totaling \$3,305,100,000;
- (2) for "Construction of facilities" amounts totaling \$152,500,000; and
- (3) for "Research and program management," \$914,000,000.

In addition, the bill would authorize such sums as may be necessary for fiscal year 1980, i.e., to be available October 1, 1979.

The enclosed draft bill follows generally the format of the National Aeronautics and Space Administration Authorization Act, 1978 (Public Law 95-76). However, the bill differs in substance from the prior Act in several respects.

First, subsections 1(a), 1(b), and 1(c), which would provide the authorization to appropriate for the three NASA appropriations, differ in the dollar amounts and/or the line items for which authorization to appropriate is requested.

Second, in section 1(f) of the draft bill, the maximum amount of appropriations made pursuant to subsection 1(c) which may be used for scientific consultations or extraordinary expenses has been changed from \$35,000 to \$25,000.

Third, sections 1(h) and 1(i) of Public Law 95-76, which provided for the expiration, on the date of enactment of Public Law 95-76, of that part of the 1976 authorization for the modification of the 40-by 80-foot subsonic wind tunnel, Ames Research Center, and the 1977 authorization for modifications to launch complex 39, Kennedy Space Center, for which appropriations have not been made, have been omitted.

Fourth, section 1(j) of Public Law 95-76, which prohibited the use of funds for the design or procurement of a prototype supersonic transport aircraft, has been deleted since it was believed to be unnecessary. No funds for the design or procurement of a prototype supersonic transport aircraft would be authorized to be appropriated by the enclosed bill.

Fifth, section 6 of Public Law 95-76, which provided authority for the National Aeronautics and Space Administration to enter into and to maintain a contract for tracking and data relay satellite services, has been omitted because by the terms of that section 6 such authority remains in effect unless repealed by legislation enacted hereafter by Congress, and is, therefore, permanent law.

Sixth, section 6 of the draft bill corrects the mislettering of subsections of section 203 of the National Aeronautics and Space Act of 1958, as amended, which resulted from enactment of the Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976, Public Law 94-413.

Seventh, section 7 of Public Law 95-76, which amended the amount authorized to be appropriated in Public Law 94-307 for the Space Shuttle program, has been omitted.

Eighth, as noted above, in addition to providing authorization of appropriations in the amounts recommended by the President in his Budget for fiscal year 1979, the bill also would provide authorization for such sums as may be necessary for fiscal year 1980. It is specified that all of the limitations and other provisions of the bill applicable to amounts appropriated pursuant to section 1 shall apply in the same manner to amounts appropriated pursuant to section 7.

Finally, the last section of the draft bill, section 8, has been changed to provide that the bill, upon enactment, may be cited as the "National Aeronautics and Space Administration Authorization Act, 1979", rather than "1978".

Where required by section 102(2)(C) of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4332(2)(C)), and the implementing regulations of the Council on Environmental Quality, environmental impact statements covering NASA installations and the programs to be funded pursuant to this bill have been or will be furnished to the Committee on Science and Technology as appropriate.

The National Aeronautics and Space Administration recommends that the enclosed draft bill be enacted. The Office of Management and Budget has advised that such enactment would be in accord with the program of the President.

Very truly yours,

ROBERT A. FROSCHE,
Administrator.

95TH CONGRESS }
2d Session

SENATE

{ REPORT
No. 95-799

NASA AUTHORIZATION FOR
FISCAL YEAR 1979

REPORT

OF THE

COMMITTEE ON COMMERCE, SCIENCE,
AND TRANSPORTATION

ON

H.R. 11401

AN ACT TO AUTHORIZE APPROPRIATIONS TO THE NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION FOR RESEARCH
AND DEVELOPMENT, CONSTRUCTION OF FACILITIES, AND
RESEARCH AND PROGRAM MANAGEMENT, AND FOR OTHER
PURPOSES



MAY 10 (legislative day, APRIL 24), 1978.—Ordered to be printed

U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1978

29-010

95TH CONGRESS }
2d Session

SENATE

{ REPORT
No. 95-799

AUTHORIZING APPROPRIATIONS TO THE NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION

MAY 10 (legislative day, APRIL 24), 1978.—Ordered to be printed

Mr. CANNON, from the Committee on Commerce, Science, and
Transportation, submitted the following

REPORT

[To accompany H.R. 11401]

The Committee on Commerce, Science, and Transportation, to
which was referred the bill (H.R. 11401) to authorize appropriations
to the National Aeronautics and Space Administration for research
and development, construction of facilities, and research and program
management, and for other purposes, having considered the same,
reports favorably thereon, with an amendment in the nature of a
substitute and recommends that the bill as amended do pass.

CONGRESSIONAL ADJUSTMENTS TO NASA REQUEST
FOR FISCAL YEAR 1979

SUMMARY

Fiscal year 1979	Budget request	House action	Senate committee action
Research and development:			
Space Shuttle	\$1,439,300,000	\$1,443,300,000	\$1,443,300,000
Space flight operations	311,900,000	308,900,000	318,900,000
Expendable launch vehicles	76,500,000	71,500,000	76,500,000
Physics and astronomy	285,500,000	285,500,000	285,500,000
Lunar and planetary exploration	187,100,000	187,100,000	187,100,000
Life sciences	40,600,000	40,600,000	42,600,000
Space applications	274,300,000	288,300,000	274,300,000
Technology utilization	9,100,000	14,600,000	9,100,000
Aeronautical research and technology	264,100,000	292,300,000	264,100,000
Space research and technology	108,300,000	111,300,000	111,300,000
Energy technology applications	3,000,000	6,000,000	4,000,000
Tracking and data acquisition	305,400,000	304,400,000	305,400,000
Total	3,305,100,000	3,353,800,000	3,322,100,000
Construction of facilities	152,500,000	147,500,000	152,500,000
Research and program management	914,000,000	914,000,000	914,000,000
Grand total	4,371,600,000	4,415,300,000	4,388,600,000

(1)

PURPOSE OF THE BILL

The purpose of this bill is to authorize appropriations to the National Aeronautics and Space Administration totaling \$4,388,600,000 for fiscal year 1979 as follows:

Fiscal year 1979	Budget request	House action	Senate committee action
Research and development.....	\$3,305,100,000	\$3,353,800,000	\$3,322,100,000
Construction of facilities.....	152,500,000	147,500,000	152,500,000
Research and program management.....	914,000,000	914,000,000	914,000,000

LEGISLATIVE HISTORY

The budget request for fiscal year 1979 for the National Aeronautics and Space Administration was introduced in the House under H.R. 10664 and in the Senate as S. 2527. After holding hearings, the House Committee on Science and Technology reported out a clean bill, H.R. 11401, which was passed by the House, with one amendment, and subsequently referred to this committee.

The committee held hearings on S. 2527 during February and March 1978. During its consideration of the bill, the committee determined amendments were required.

The committee reported out H.R. 11401 with an amendment striking all after the enacting clause and inserting the committee amendment.

SUMMARY

The NASA budget request for fiscal year 1979 totals \$4,371,600,000, of which \$3,305,100,000 is for Research and Development, \$152,500,000 is for the Construction of Facilities, and \$914 million is for Research and Program Management.

The House has approved a total \$4,415,300,000, an amount \$43,700,000 above the request, of which \$3,353,800,000 is for Research and Development, \$147,500,000 is for Construction of Facilities, and \$914 million is for Research and Program Management.

The committee recommends that a total of \$4,388,600,000 be authorized to be appropriated for NASA's fiscal year 1979 programs, an amount \$17 million above the request. Of the total amount recommended by the committee: \$3,322,100,000 is for Research and Development programs, which is \$17 million above the request and \$31,700,000 below the amount approved by the House; \$152,500,000 is for Construction of Facilities, which is identical to NASA's request and \$5 million above the House-approved amount; and \$914 million is for Research and Program Management, which is identical to the request and to the amount approved by the House.

The \$17 million recommended by the committee over NASA's request is directed to the future needs of the Nation in space and energy as follows:

- (1) \$4 million to initiate production of a fifth Space Shuttle orbiter;
- (2) \$10 million for advanced studies and technology development directed to exploiting the capabilities of the Space Shuttle;

(3) \$2 million to study man's response to long duration space flight, and;

(4) \$1 million to enhance the identification of energy technologies in NASA.

The committee's recommendation is \$324,460,000 above the amount available to NASA for fiscal year 1978, an increase of 0.4 percent after allowing for the effects in inflation. As in recent years, the fiscal year 1979 NASA authorization recommended by the committee represents less than 1 percent of the total new budget authority recommended by the President and the Congressional Budget Committees.

In evaluating the NASA budget request for fiscal year 1979, the committee has reviewed carefully the programs approved by the Congress in prior years and has tried to maintain NASA's capability to contribute to the national research and technology base, an essential factor in advancing scientific and technical knowledge, increasing national productivity and responding to current and emerging national needs. As a consequence, the bill recommended by the committee supports research and development projects currently underway and some important new starts. These starts, all within the space function, are:

(1) A 25 KW power module to be used in conjunction with the Space Shuttle to provide additional electric power for experiments and other on-orbit operations;

(2) The Solar Polar Mission, a joint NASA-European Space Agency mission to study the Polar regions of the Sun to enhance our understanding of the Sun's influence on the Earth's environment;

(3) The Solar Mesospheric Explorer to study the chemistry of the upper stratosphere and mesosphere, especially the ozone in these regions;

(4) An Earth Radiation Budget Satellite System to measure temporal and spatial variations in the radiation heat balance of the Earth, a major factor in creating atmospheric winds and ocean currents; and

(5) A Halogen Occultation Experiment to assess the role of chlorine in stratospheric chemistry as it affects the ozone layer which protects the Earth from ultraviolet radiation.

Each of these new starts is a multiyear project which can be supported without major impact on the NASA budget in subsequent years.

The bill provides funding for the continuing development of the Space Shuttle, the principal element of the national space transportation system. This system is designed to reduce the cost of space operations and to provide a versatile capability to explore and use space to meet national and international needs. As it did last year, the committee is recommending a five-orbiter fleet, notwithstanding the administration's proposal for a four-orbiter fleet with an option, open to fiscal year 1981, to purchase a fifth orbiter. After careful consideration of this issue, the committee found the acquisition of a five-orbiter fleet to be a prudent and sensible decision and one necessary to meet civilian and defense needs in the most economical way. The committee, therefore, added \$4 million to the Space Shuttle program to initiate the production of a fifth orbiter.

During the past year the Space Shuttle main engine has experienced development problems. As a consequence, the committee requested an independent technical review of this program which was made by an ad hoc Committee of the Assembly of Engineering, National Research Council, National Academy of Sciences. The ad hoc committee found the development of the Shuttle main engine to be a challenging task; it recognized that engineering problems were being experienced during the engine's development and testing. However, the ad hoc committee reported that the engine's design was basically sound and that a safe and reliable main engine should be developed. The ad hoc committee also proposed certain changes in the engine's development and testing program which NASA accepted. In the ad hoc committee's view, the schedule for the first manned orbital flight, presently scheduled for mid-1979, should be reviewed in late summer or early fall after additional engine test data are available.

The committee's recommendation also supports major projects in space science and applications approved in prior years such as the Solar Maximum Mission, the Space Telescope, the Galileo (Jupiter orbiter/probe) mission, the Pioneer/Venus mission, the Voyager mission, the Landsat D mission, and significant efforts in earthquake monitoring and forecasting, ocean condition monitoring and forecasting, environmental quality monitoring, weather observation and forecasting, climate research, materials processing, and space communications. Each of these initiatives is dedicated to the expansion of knowledge about the universe and the Earth's space environment and, in turn, the application of this knowledge to the solution of problems on Earth.

The NASA aeronautics program recommended by the committee supports research and development projects in all of the major classes of aeronautical vehicles; these include conventional takeoff and landing aircraft, rotorcraft, general aviation aircraft including aerial applications technology, short takeoff and landing aircraft, supersonic cruise aircraft, and high performance aircraft. In the area of conventional takeoff and landing aircraft, the major effort continues to be on aircraft energy efficiency technology with the goal of providing by the early 1980's the technological advances that will lead to a major reduction in aircraft fuel requirements. It should also be noted that two major new research facilities are under construction: modification of the 40-by 80-foot subsonic wind tunnel at the Ames Research Center and construction of the National Transonic Facility at the Langley Research Center. When completed in the early 1980's, these two facilities, in conjunction with the Aeropropulsion Systems Test Facility being funded through the Department of the Air Force, will be among the best aeronautical research facilities in the world and, combined with other NASA research capabilities, should enable the United States to maintain its world leadership in aeronautics.

In addition to these major undertakings, the committee's recommendation will also provide funds for a number of smaller but important scientific research and technology development tasks, in both space and aeronautics. In sum, these recommendations provide for a balanced program of present activities and for maintaining the scientific and technical base necessary for undertaking future initiatives that will build on and extend the knowledge being acquired. Also, this budget will continue a highly constructive and successful program of

international space cooperation involving more than 60 nations, all of whom participate in the program on a reimbursable or *quid pro quo* basis.

The construction of facilities authorization recommendation is about \$10 million below fiscal year 1978. Of the amount recommended, \$76,530,000 is for aeronautical facilities, and \$31,070,000 for Space Shuttle facilities related particularly to launch and production requirements. About \$7.6 million are for support facilities at the Langley Research Center and Goddard Space Flight Center and about \$5 million to modify and enlarge the space flight operations facility and provide seismic protection in nine buildings at the Jet Propulsion Laboratory. \$17.8 million is recommended for 55 individual facility rehabilitation and modification projects, under \$500,000 each, at various NASA installations as part of a continuing program to offset the cumulative effects of wear and deterioration on the NASA physical plant which has an estimated value of about \$6.1 billion. \$4,200,000 is also recommended for construction of minor facilities and additions to existing facilities, with a limitation of \$250,000 on each individual project. Finally, \$10,650,000 is recommended to support the day-to-day facility planning and design activities associated with maintaining the NASA physical plant and for planning and design of large, complex facilities requiring long-range and detailed engineering efforts.

The committee's recommendation for research and program management reflects a personnel level of 23,237 for fiscal year 1979; this is 500 positions below that authorized in fiscal year 1978. About 76 percent of the funds for research and program management is for personnel and related costs. The remaining 24 percent is divided among facility services, technical services, administrative support and travel. It is the committee's view that the long-term health of the U.S. aeronautics and space program depends on NASA's skilled and committed civil service personnel. In view of the significant reduction in personnel during 1978, further reductions are unwarranted.

The committee also considered several legislative amendments as discussed later in this report under the "Legislative changes." Two of the amendments are technical in nature and the third deletes the authorization of appropriations for NASA for fiscal year 1980 which will be the subject of a separate authorization bill next year.

The Subcommittee on Science, Technology and Space held hearings on this bill on February 21, 22, 28, March 1, 7, 8, and 16. On March 31, in a separate hearing, the subcommittee received the report of the ad hoc committee of the Assembly of Engineering, National Research Council on the technical status of the Space Shuttle main engine. During the course of these hearings, the subcommittee heard testimony from NASA, the Department of Defense, the Department of Energy and from other members and organizations of the scientific and engineering community representing the general public. Statements for the record were received from other Government agencies conducting space and space-related programs that have significant relationships with NASA in research and development activities.

The Subcommittee on Science, Technology and Space met on April 14, 1978, to prepare its recommendations to the full committee. The Committee on Commerce, Science, and Transportation met on April 25, 1978, marked up the bill, and ordered the bill reported.

RESEARCH AND DEVELOPMENT

SUMMARY

Fiscal year 1979	Budget request	House action	Senate committee action
Research and development:			
Space Shuttle.....	\$1,439,300,000	\$1,443,300,000	\$1,443,300,000
Space flight operations.....	311,900,000	308,900,000	318,900,000
Expandable launch vehicles.....	75,500,000	71,500,000	75,500,000
Physics and astronomy.....	285,500,000	285,500,000	285,500,000
Lunar and planetary exploration.....	187,100,000	187,100,000	187,100,000
Life sciences.....	40,500,000	40,500,000	42,500,000
Space applications.....	274,300,000	288,300,000	274,300,000
Technology utilization.....	9,100,000	14,600,000	9,100,000
Aeronautical research and technology.....	264,100,000	292,300,000	264,100,000
Space research and technology.....	108,300,000	111,300,000	111,300,000
Energy technology applications.....	3,000,000	5,000,000	4,000,000
Tracking and data acquisition.....	305,400,000	304,400,000	305,400,000
Total.....	3,305,100,000	3,353,800,000	3,322,100,000

SPACE SHUTTLE PROGRAM, \$1,443,300,000

OBJECTIVES

The Space Shuttle, under development since 1972, is the key element of the U.S. space transportation system. It will provide users, both national and international, with round-trip access to space, beginning in 1980. The Space Shuttle consists of the following basic flight hardware elements—the orbiter, with its main engines, the external propellant-tank, and twin solid rocket boosters. In addition, there is a ground-based launch and landing system. It is a reusable system, except for the external propellant-tank.

The Space Shuttle will be the first U.S. reusable space vehicle and is configured to carry payloads to and from low Earth orbit. It will make possible multipurpose, economical space operations for applications, scientific, defense, and technological payloads. It will offer capabilities that cannot be achieved with today's expandable launch vehicles. For example, the Space Shuttle will be able to carry payload specialists—both women and men—into space to operate scientific experiments or other space payloads that require the manual dexterity and logical judgments of man. The Space Shuttle will be able to retrieve payloads from orbit for reuse; to service and repair satellites in space; to transport materials and equipment to orbit; and to carry out rescue missions if needed. These capabilities of the Shuttle will greatly enhance the flexibility and productivity of space operations and reduce their cost. The Space Shuttle will have a large payload volume of 285 cubic meters (370 cubic yards) and a weight-carrying capacity of up to 29,500 kilograms (65,000 pounds). This large payload capability will permit payloads to be built to less restrictive design requirements.

The Space Shuttle will be boosted into orbit by the thrust of its three liquid oxygen/liquid hydrogen main engines, burning in parallel with the twin solid rocket boosters. Two minutes into the flight, at an altitude of about 45 kilometers (24 nautical miles) the solid rocket boosters will burn out, separate, and descend by parachute and land in the ocean about 260 kilometers (140 nautical miles) down range from the launch site. The large solid rocket boosters will be recovered for refurbishment and reuse. The orbiter will continue on into space powered by its three main engines for another 6½ minutes. Just before orbital

insertion, the main engines will be shut down and the external tank will be jettisoned. Following a ballistic trajectory the empty tank will reenter the atmosphere, tumble, and break up over a remote ocean area about 18,500 kilometers (10,000 nautical miles) down range from the launch site. The orbiter, aided by its orbital maneuvering engines, will enter the Earth's orbit to perform a mission of up to 30 days' duration. After completing the mission, the orbiter will again fire its orbital maneuvering engines to deorbit and reenter the atmosphere, approach and land much like an ordinary airplane at a landing strip located close to the launch site.

The Space Shuttle will have a crew of three: The commander, the pilot, and a mission specialist. On some missions, one or more payload specialists will be added to the crew to check out and operate payloads. The crew will experience forces no greater than three times that of gravity during launch and landing and will be able to perform their duties in a shirt sleeve environment.

Summary of resources requirements

Design, development, test and evaluation:

Orbiter.....	\$536,500,000
Main engine.....	176,700,000
External tank.....	80,500,000
Solid rocket booster.....	63,500,000
Launch and landing.....	128,100,000
Subtotal.....	985,300,000

Production:

Orbiter.....	397,000,000
Main engine.....	18,000,000
Launch and landing.....	11,000,000
Spares and equipment.....	28,000,000
Subtotal.....	458,000,000

Total..... 1,443,300,000

* \$4 million addition not allocated to program elements.

Milestone schedule

First manned orbital flight.....	Mid-1979.
Five orbital flight tests.....	3d quarter 1979 to mid-1980.
Initial operational capability.....	Mid-1980.
Delivery of second orbiter (upgraded structural test article, Orbiter 099).....	Early 1981.
Delivery of third orbiter (Orbiter 103) to Vandenberg AFB).....	Late 1982.
Delivery of fourth orbiter (Orbiter 104) to Kennedy Space Center.....	1983.
Delivery of fifth orbiter (Orbiter 105).....	1984.

Design, development, test and evaluation.—Space Shuttle development is well underway and in the testing period leading to the first orbital test flight about mid-1979. All major Shuttle system elements are under contract. The approach and landing tests have been successfully completed and have verified the performance of the orbiter for low-altitude subsonic flight. Orbiter 101, which was used for the approach and landing tests, will also be used for full-scale ground vibration tests; after these tests, a decision will be made on the future use of Orbiter 101 for spares, parts for fabricating the operational orbiters, or possibly for modification to an operational capability.

Orbiter 102 will be used for the orbital flight tests. It is being assembled and checked out at Palmdale, Calif. Later this year, Orbiter 102 will be delivered to the Kennedy Space Center where it will be prepared for launch.

Production.—The purpose of the Shuttle production program is to build a national fleet of operational orbiters. In his fiscal year 1979 budget request, the President has proposed a four-orbiter fleet with an option to buy a fifth orbiter at a later date; this is down from the five-orbiter fleet proposed last year.

The four-orbiter fleet will be made up of the refurbished Orbiter 102; the structural test article (Orbiter 099) uprated to operational capability; and two new orbiters, Orbiters 103 and 104.

The estimated cost of the four-orbiter fleet through fiscal year 1984 is \$2.522 billion (fiscal year 1979 dollars); this figure includes \$220 million in fixed costs originally allocated to the fifth orbiter, which the four-orbiter fleet must now absorb. A five-orbiter fleet, assuming the fifth operational orbiter is authorized by the Congress for fiscal year 1979, is estimated to cost \$2.787 billion (fiscal year 1979 dollars) or a net \$265 million more than the four-orbiter fleet. Adding the fifth orbiter in fiscal year 1979 would increase the cost of the five-orbiter fleet by \$365 million; however, if a five-orbiter fleet is authorized initially, then \$100 million can be saved by eliminating the weight reduction program for Orbiter 099, the second operational orbiter. This weight reduction program can be dispensed with and still provide an operational fleet with the required three full-capability orbiters. In a four-orbiter fleet, only Orbiters 103 and 104 would be full-capability orbiters, so one of the earlier orbiters—that is, Orbiter 102 or Orbiter 099—must undergo a weight reduction program to bring it up to full capability.

If it is decided by the Congress to proceed with the fifth orbiter in fiscal year 1979, but later the Congress decided to delete it, say at the end of fiscal year 1980, the cost penalty would be \$77 million (fiscal year 1979 dollars); that is, the four-orbiter fleet then would cost \$2.599 billion.

If the decision to build a fifth orbiter is put off until the 1981 budget, total production cost of the five orbiters is estimated to be \$3.022 billion (fiscal year 1979 dollars); \$235 million more than it would cost if the decision is made in the fiscal year 1979 budget.

A logical and important question: What is the difference in cost between operating a five-orbiter fleet and a four-orbiter fleet for the initial operational period between 1980 and 1991? For this period, the National Aeronautics and Space Administration with inputs from the Department of Defense and other users of the Space Shuttle has estimated the space traffic for each of the users, at each of the launch sites, annually. Considering all of the nonrecurring, operations, and payload costs for both the civil and DOD space program, it is estimated that it will cost \$2 to \$2.5 billion more to operate a four-orbiter fleet than a five-orbiter fleet if no orbiter attrition is taken into consideration. If orbiter attrition is taken into consideration, then the proposed four-orbiter fleet will cost \$4.3 billion more to operate during the operational period than a five-orbiter fleet. The principal reasons that a four-orbiter fleet costs much more to operate than a five-orbiter fleet are: (1) Many more expendable launch vehicles must be used for a much longer period during the 1980's and (2) payloads will have to continue

to be designed to be launched by both the Space Shuttle and an expendable launch vehicle; therefore, payloads will be unable to take full advantage of the Space Shuttle's capabilities.

If only four operational orbiters are built, and there is a serious orbiter accident, leaving the United States with only three orbiters, after the middle 1980's a three-orbiter fleet cannot fly the projected number of space missions. This would have serious repercussions for the U.S. space program and especially for the military space program, which is planning to use the Space Shuttle for all of its operational missions beginning about 1985.

Fiscal year 1978 program adjustments.—During fiscal year 1978, \$100 million was transferred from the Shuttle production budget to the design, development, test, and evaluation budget to help solve technical problems and to bring a better balance to the overall Space Shuttle program effort. Consequently, the current estimate for fiscal year 1978 Shuttle production is \$100 million lower than the amount authorized and appropriated for fiscal year 1978. However, \$70 million was made available to the production program from the economic stimulus appropriations, 1977 (Public Law 95-29). This funding has enabled NASA to maintain an orderly flow of follow-on orbiter production and main engine fabrication efforts but the delivery of the Orbiters 103 and 104 will be delayed 6 months. These extended delivery dates will not impact the Department of Defense's need for the Space Shuttle at Vandenberg Air Force Base, Calif.

Fiscal year 1979 activities.—Following is a summary of the major Shuttle program activities planned for fiscal year 1979:

Design, development, test, and evaluation (DDT&E)

Orbiter:

- Complete Shuttle system ground vibration testing.
- Complete structural load tests on the structural test article.
- Complete certification for Orbiter 102 flight readiness.
- Conduct the first and second orbital flight tests.
- Continue fabrication of the structural test article crew module.

Engine:

- Complete the main engine preliminary flight certification.
- Complete main propulsion testing for orbital flight verification.
- Deliver the first set of flight engines for the orbital flight tests to Kennedy Space Center, Fla. (KSC).
- Deliver backup engine to KSC.

External tank:

- Delivery of the first three tanks to KSC.
- Final assembly and acceptance tests of remaining three DDT&E tanks.

Solid rocket booster:

- Complete structural and qualification tests of solid rocket booster systems.
- Complete solid rocket motor qualification tests.
- Deliver three sets of flight hardware to KSC.
- Complete assembly and checkout of two sets of flight solid rocket boosters.

Launch and landing system:

Complete installation and checkout of the launch processing system and all ground support equipment (GSE) and activate the first line facilities and GSE (station sets) at KSC.

Process the flight vehicle for the first three orbital flight tests.

Launch the first two orbital flight tests.

Retrieval, recovery, and processing of the reusable flight hardware from the first two orbital flight tests.

Production

Continue fabrication and assembly of those subsystems required to upgrade the structural test article (Orbiter 099) to the second operational orbiter to be delivered in early 1981.

Fabrication and assembly of major subsystems for the third orbiter (Orbiter 103).

Initiate procurement of long-lead time items for and initiate the fabrication of the fourth orbiter (Orbiter 104).

Initiate the assembly of the first set of production Space Shuttle main engines.

Initiate the procurement of the "second line" launch processing and checkout capability at KSC needed to support simultaneous processing and checkout of two orbiter vehicles.

Initiate procurement of orbiter and main engine spares and equipment. Initiate procurement of additional tooling to increase the production rate of the solid rocket motors and external tanks.

COMMITTEE COMMENT

Five-orbiter fleet.—An efficient, economical, convenient, and reliable space transportation system is essential in conducting space science and space applications programs for the benefit of humanity and in maintaining a leadership role in space activity for the United States. These were the factors underlying the decision to initiate the Space Shuttle development. Following through on this commitment, the administration and the Congress, in their fiscal year 1978 budget decisions, agreed to the acquisition of a five-orbiter fleet as the appropriate course of action to produce the results predicted for the system concept. Further study has not changed the factors present in this decision. The committee considers the acquisition of a five-orbiter fleet to be an eminently sensible economic decision in the best civilian and defense interests of the Nation; a commitment at this time rather than 1981 will save about \$235 million. Therefore, the committee has added \$4 million to the Space Shuttle program to initiate production of the fifth orbiter.

Shuttle main engine.—During 1977 the Space Shuttle main engine program continued to experience normal development problems that have affected the test schedule and could eventually affect the ability to achieve adequate engine running time to support the first manned orbital flight test. As a consequence, the committee requested NASA to initiate an independent review of the program to assure that all objectives would be achieved. This review was conducted by an ad hoc committee of the Assembly of Engineering of the National Research Council and a report was presented to the committee on

March 31, 1978. The ad hoc committee characterized the development of the Shuttle engine as a difficult engineering challenge. While recognizing that problems were being experienced in engine development and testing and in setting forth constructive recommendations to assist NASA, the committee concluded that there was no reason to believe that a safe and reliable main engine could not be developed. The ad hoc committee also noted that the schedule for the first manned orbital flight should be reviewed in late summer 1978 after completion of the current series of engine tests. The committee requests that NASA continue giving the development of the main engine priority attention to assure that all elements of the Shuttle system development program can continue to move forward on a completely integrated and optimum schedule. The committee also requests that it be informed promptly of the outcome of the engine testing now underway.

SPACE FLIGHT OPERATIONS PROGRAM, \$318,900,000**OBJECTIVES**

The space flight operations program includes space transportation system operations capability development; the common support activities conducted under development, test, and mission operations; advanced programs; and space transportation system operations.

Summary of resources requirements

Space transportation system operations capability development...	\$110,500,000
Development, test and mission operations.....	163,000,000
Advanced programs.....	12,000,000
Space transportation system operations.....	33,400,000
Total.....	318,900,000

Space transportation systems operations capability development.—This program includes necessary development and support activities for the space transportation system other than the Space Shuttle. The principal areas of activity include the Spacelab, upper stages, multimission and payload support equipment, mission control center upgrading (level II), and payload and operations support.

Spacelab, a major element of the space transportation system, is being developed and paid for by the European Space Agency (ESA). NASA supports ESA's Spacelab development effort. This support includes developing a crew transfer tunnel and procurement of necessary mockups, trainers, and ground support equipment not provided by ESA. Other activities include procurement of flight and ground hardware, and system activation activities to assure Spacelab compatibility with the orbiter and an operational capability.

The upper stages consist of the inertial upper stage (IUS) being developed by the Air Force and the spinning solid upper stages (SSUS), being developed and funded by the McDonnell Douglas Corporation. All are expendable stages and will be used to deploy Shuttle payloads to high energy orbits not attainable by the Shuttle alone. The IUS will be operational in 1980 and will be used primarily for high energy lunar and planetary missions and for the delivery of up to 5,000-pound payloads to geosynchronous orbit. The SSUS will be operational in 1980, and will be used to put Delta-1,250

pounds—and Atlas-Centaur—2,250 pounds—class payloads into geosynchronous orbit.

Multimission and payload support equipment consists of ground and flight hardware used at the interfaces between the payloads and the space transportation system, as well as test equipment to verify payload integration compatibility. This hardware will be developed under a standard, reusable inventory for all payloads.

The mission control center upgrading—level II—consists of the reconfiguration and upgrading of the Johnson Space Center Mission Control Center (MCC) to support the space transportation system operational flights, a ground simulation network, and the interface between MCC and the launchsite.

The payload and operations support activity encompasses five major efforts: (1) operations management to determine the most efficient method of operating the space transportation system; (2) integrating payloads on the orbital flight tests during the fiscal year 1979–80 period; (3) command and control of Shuttle/Spacelab attached payloads; (4) development of the capability to support early missions and development of common operational procedures between the Kennedy Space Center and the Vandenberg Air Force Base; (5) Skylab reboost/deorbit mission on the third orbital flight test, including the development of the teleoperator retrieval system, a low-thrust maneuverable stage remotely controlled through a television/control link to the orbiter.

Development, test and mission operations (DTMO).—This activity provides the common engineering, scientific and technical support required to conduct ongoing and proposed space flight research and development at the Johnson Space Center, the Kennedy Space Center, the Marshall Space Flight Center and the National Space Technology Laboratories. DTMO functions include research and test operations, data systems and flight operations; operations support, and launch systems operations. These common efforts are necessary to support early project definition; to provide engineering support for indepth technical examination of development efforts of prime and major subcontractors; to provide common support equipment and supplies; and to perform backup design, testing and analysis in high technology areas of development.

Advanced programs.—These programs provide technical as well as programmatic data for the definition and evaluation of potential future space programs and systems. These efforts provide the basis for future directions, new programs, and systems. In support of these activities, subsystem studies and supporting development activities are conducted to demonstrate significant performance and reliability improvements and to reduce future program risks and development costs through the effective use of new technologies. Major emphasis in fiscal year 1979 will be placed on system studies and the definition of near term mission options that are possible because of the operational capability and flexibility of the space transportation system. This includes orbital operations associated with the fabrication, deployment, and operation of advanced space systems using large structures and space power modules, retrieval and reuse of space systems, long duration operations in low Earth orbit, and systems to allow operational capabilities at geosynchronous orbit.

Space transportation system operations.—This program provides for the transportation services and operational activities needed to capitalize on the unique advantages of space to expand human knowledge and increase the practical benefits here on Earth. These services and activities include the delivery of free-flying payloads to low Earth orbit, the conduct of experiments using the Shuttle orbiter as a carrier-vehicle, the conduct of experiments in the Spacelab, the conduct of experiments using Spacelab pallets, the delivery of payloads to synchronous and other high energy orbits using the combined capabilities of the Shuttle and upper stages, retrieval of free-flying payloads from low Earth orbit, and the on-orbit servicing of satellites. Operational flight missions are planned so that they can be accomplished in an efficient and economical manner. This is done by appropriately combining payloads, experiments and mission objectives on specific flights. Under space transportation system operations activities, the Space Shuttle system, the Spacelab, the upper stages and the payloads are integrated into a versatile and economical system. Space transportation system operations also provide for the recurring hardware and consumables such as the external tank, solid rocket booster, rocket fuels, and oxidizers; and supports all launch, flight recovery, crew and related activities.

COMMITTEE COMMENT

Development, test and mission operations.—It is the committee's view that the supporting activities funded within the development, test and mission operations subprogram are essential to the success of near-term developments, particularly the Space Shuttle orbital flight test program. Until the Shuttle has achieved operational status, the committee believes this subprogram should have priority on the assignment of resources and, therefore, it did not concur with the \$10 million reduction in this subprogram as proposed by the House.

Advanced programs.—The Office of Management and Budget reduced NASA's request for its advanced programs activities in the space flight operations program by \$7 million, from \$12 million to \$5 million. These activities support definition of concepts, systems studies and technology identification and advancement, all of which is designed to exploit the Space Shuttle's unique capabilities to conduct new and imaginative space science and applications programs. Two million dollars of the request to the OMB, and an item specifically denied, was for preliminary design of a 25 KW power module, a system to provide additional electrical power for experiments and other on-orbit operations. The committee believes these advanced program activities are essential to a substantive and forward-looking program designed to maintain our leadership in space in the years ahead. Accordingly, the committee added \$7 million to the space flight operations program authorizing a total of \$12 million for advanced programs, and specifically authorizes NASA to initiate development of the 25 KW power module.

The committee, therefore, recommends a total of \$318,900,000 for the space flight operations program.

Teleoperator development.—The committee supported development of the teleoperator retrieval system in fiscal year 1978 with immediate application to a Skylab reboost or deorbit mission and with subsequent

utilization in Shuttle-based on-orbit space activities. The development of the teleoperator system should continue. However, inasmuch as there is difficulty in determining precisely the orbital decay date for the Skylab and what actions that can or should be taken with respect to it, the committee requests that it be kept informed on the Skylab status and NASA's plans to activate or deorbit this space vehicle together with the timing and the funding of such operations. In the event it becomes impossible to reach Skylab prior to its reentry, the committee will want to consider further the justification and development schedule of the teleoperator.

EXPENDABLE LAUNCH VEHICLES PROGRAM, \$76,500,000

COMMITTEE COMMENT

This program represents our total civilian, and in part our military, space launch capability until the Space Shuttle is operational. The value of payloads continues to far outweigh launch vehicle costs. Therefore, it is important to assure that the necessary technical and other support are provided to assure successful launch performance. Transition to Shuttle launch capability is reflected in the fact that the budget request is \$58 million below the fiscal year 1978 program. Further reductions, for the reasons indicated, are not warranted at this time. Accordingly, the committee recommends approval of the NASA request of \$76.5 million for this program, disagreeing with the House cut of \$5 million.

PHYSICS AND ASTRONOMY PROGRAM, \$285,500,000

LUNAR AND PLANETARY EXPLORATION PROGRAM, \$187,100,000

COMMITTEE COMMENT

While the committee supports the new starts in the space science program area and the increase in funding for the physics and astronomy and the lunar and planetary programs, it regrets that the Lunar Polar Orbiter project was not included in the budget for fiscal year 1979. This project with a capability for long-term surveillance and study of the Moon, is considered to be able to make significant contributions to space science. Accordingly, the committee requests that NASA again give this project high priority among its candidates for the fiscal year 1980 budget.

LIFE SCIENCES PROGRAM, \$42,600,000

COMMITTEE COMMENT

The committee believes that it is most important to provide the answer to questions surrounding the human response to long-duration space flight and to extended work activity in the space environment. This understanding is essential to achieving maximum use of space as anticipated by the Shuttle. The program also has a direct relationship to the expansion of medical knowledge. Accordingly, the committee has added \$2 million to this program for activities related to life science experiments for Spacelab missions. The program recommendation is, therefore, \$42.6 million.

SPACE APPLICATIONS PROGRAM, \$274,300,000

COMMITTEE COMMENT

Stereosat.—The committee received testimony on the Stereosat satellite system and understands the complementary contribution Stereosat-type data would make to the Earth resources data being produced by the Landsat system. However, as the committee notes elsewhere in this section of the report, several years have passed without the ability of responsible parties and beneficiary organizations to establish, or even formulate, institutional arrangements for an operational Landsat system. While the committee does not basically disagree with the action of the House on the Stereosat proposal, the suggested Government-industry arrangement, in the absence of some institutional framework, would appear to complicate further the present situation. In addition, the committee is awaiting the results of Presidential space policy studies which are badly needed and which ought to address the issues existing in the Earth resources satellite area. In view of the foregoing, the committee is not persuaded that it should take any action on the Stereosat proposal at this time. Nevertheless, the committee requests NASA to resume definition studies for a Stereosat system so that when the institutional questions have been resolved, the project will be in a position to proceed expeditiously should that be the desired course of action.

Global information system.—The committee is concerned about the lack of concerted and aggressive effort by the administration to devise new institutional arrangements necessary to manage maturing opportunities in space. Further, there appears to be a reluctance to commit the United States to longer run purposes and directions in the space program. Accordingly, the committee directs NASA to use funds, not to exceed \$2 million, within the total amount recommended for the space applications program to study and define a global information system that would tie together and disseminate the Earth resources, environmental and meteorological data gathered by remote sensing satellites. Such a system would provide the international community with knowledge about such critical problems as drought, energy shortages, pollution, famine and natural and manmade disasters. This study and definition program should also consider the enhancement of communications techniques to provide a host of new services as has been suggested by studies of communications satellite applications. The committee believes these areas of space applications should become explicit goals for the United States to be achieved by the mid-1980's.

Operational Landsat.—The United States has developed a substantial capability to monitor the Earth resources and environment using experimental remote sensing satellite systems. However, to date the executive branch has not developed a plan to move these systems from experimental to operational status.

Last spring the committee held hearings on S. 657, the purpose of which is to establish an operational Earth information system. At those hearings, the Director of the Office of Science and Technology Policy, Executive Office of the President, said that he would move rapidly to appoint a committee to begin to explore the major questions outlined in his testimony and in the statements of other department and agency witnesses. In September, he wrote the committee and said, "it is my belief that the higher level policy issues which pertain to a long-term

or operational earth resources satellite system should be addressed by a small group of officials at the cabinet level. That forum would be used to resolve some of the more salient domestic and foreign policy questions surrounding a federal commitment to the satellite program." The Director said he hoped that this would be concluded in 6 months. That has not happened. More recently, the Director appointed three consultants to review the issues related to an operational remote sensing satellite system; the committee was informed that they would present him with an options paper sometime around the end of March 1978. This deadline has not been met.

It is the committee's strong view that the Government should move expeditiously to resolve these issues and to begin the process of moving toward an operational system. It is hoped that the Director of the Office of Science and Technology Policy will soon conclude his study and report his findings to Congress so that the Congress and the executive branch can seek resolution of this important legislative issue.

Communications satellites.—The committee is concerned over the lack of direction in NASA's communications satellite program, particularly as it pertains to developing such communications to meet public service needs in safety, education, medical care, and other social services. For example, there is no followthrough on the Appalachian educational satellite program even though its utility has been clearly demonstrated. Yet, NASA testified that there is a continuing need for demonstration of communications satellites in innovative public service applications. Recently, NASA stated that the communications satellites for public services such as the Appalachian educational satellite program can be furnished by the common carrier. However, it appears improbable that such service could be supplied by any common carrier at a cost most public service users could afford. Technology for low-cost operations has not been developed. Therefore, the committee urges NASA not to delay any longer regarding the development of communications satellites for public services and to proceed as expeditiously as possible so that communications satellite demonstration programs are able to meet the needs of the users.

TECHNOLOGY UTILIZATION PROGRAM, \$9,100,000

COMMITTEE COMMENT

In its report on the fiscal year 1978 authorization bill, the committee requested NASA to study methods to broaden and to integrate its activities for technology transfer and applications assistance with those of other Government entities. NASA has examined the problem and as a result, planning is now underway for a collaborative study effort among NASA, the National Science Foundation, and other Federal agencies, to be coordinated by the Office of Science and Technology Policy. Against this background, the committee did not concur with the House addition of \$1.5 million to this program pending a better understanding of how and where such additional resources should be productively applied.

With respect to the House addition of \$4 million, together with proposed amendments to the National Aeronautics and Space Act of 1958 directing NASA to undertake activities in bioengineering to assist the handicapped and the disabled, the committee notes that NASA has supported a biomedical applications activity under the technology utilization program for several years. This activity, interpreted as a requirement of and authorized by the Space Act, has addressed medical problems, including those of the handicapped, through the application and transfer of aerospace technology as an adjunct to NASA's primary space and aeronautics research mission. The present budget request of \$9.1 million contains \$1.7 million to continue such bioengineering applications activities. While the committee supports fully the technology utilization program, it does not understand the rationale for expanding NASA's basic charter into a specific area of medicine or for the substantial increase in resources applied to this activity.

AERONAUTICAL RESEARCH AND TECHNOLOGY PROGRAM, \$264,100,000

COMMITTEE COMMENT

Aircraft energy efficiency.—The committee believes the aircraft energy efficiency program is a most timely initiative and vital to the continued success of U.S.-built aircraft in the world marketplace—timely, in particular, because of the rapidly approaching large volume purchases of new subsonic commercial transports and the aggressive posture being presented by foreign manufacturers for this business. Accordingly, this program must be accorded the highest priority commensurate with technological barriers and the responsibility to address other aeronautical research activities. The committee recognizes the importance of NASA's research and development efforts on composite primary aircraft structures to the aircraft energy efficiency program. However, NASA witnesses testified that the problem of "free-floating" graphite fibers used in composite structures was under study, and that the extent of the problem was unknown. Against this background the committee did not agree with the House addition of \$26.7 million for an accelerated effort on composite structures. The committee views supersonic aircraft technology as a proper and necessary part of NASA's aeronautical research program and supports this activity at the requested level; however, for reasons already indicated, priority should be given to subsonic aircraft improvements and, therefore, the committee did not concur with the House addition of \$12 million to supersonic research and an offsetting reduction in the aircraft energy efficiency program.

Aerial application technology.—The committee is convinced, following review of the aerial applications technology program plan developed by NASA during 1977, that NASA can make a significant contribution to increasing the productivity of aerial application of agricultural materials. Work in two principal areas of benefit—drift control and uniformity of application—has been initiated utilizing \$1 million in fiscal year 1978 funds authorized for this activity. The work will be continued with \$500,000 in the fiscal year 1979 budget. However, there are no present plans to support aerial applications technology beyond fiscal year 1979. The committee finds this unacceptable, particularly when it notes that \$11.8 million is planned for general aviation activities which also involve improvements to small, light, generally noncommercial aircraft and the operation of these aircraft. While the committee recognizes differences between aerial applications aircraft and general aviation aircraft, it believes there are technology advancements that may have application to both types. Accordingly, the committee requests that NASA (1) integrate its aerial applications technology activities with its general aviation program and (2) within that program, develop definitive plans for fiscal year 1980 and subsequent years to continue the work in aerial applications technology initiated in fiscal year 1978 and to explore other significant technology initiatives identified in the technology program plan. The committee expects that this matter will be addressed in the fiscal year 1980 budget and that in the interim period, NASA will periodically inform the committee of its progress on this request.

Commuter air service.—The committee perceives a problem in air service between smaller cities and major hubs, or commuter-type small community air transportation. It is clear that one factor inhibiting public acceptance and use of commuter air transportation is the technological lag between commuter aircraft and the equipment used by the major civil air carriers. Therefore, the committee requests NASA, in consultation with the Department of Transportation and the Civil Aeronautics Board, to prepare a comprehensive report on (1) technical improvements in commuter aircraft that would likely increase their public acceptance and use, and (2) whether NASA's aeronautical research and development program could help commuter aircraft manufacturers solve these technical problems. If NASA identifies such areas of activity, the committee would expect to receive a specific funding request in the fiscal year 1980 budget.

With the exception of the aerial applications technology effort which requires additional attention, the committee views the NASA request, an increase of \$36 million above the fiscal year 1978 operating plan, as representing a well-balanced program and, accordingly, recommends its approval as submitted.

SPACE RESEARCH AND TECHNOLOGY PROGRAM, \$111,300,000
COMMITTEE COMMENT

The committee recommends \$111,300,000 for this program, an increase of \$3 million above the NASA request to support additional research and technology advancement needed to respond to opportunities and to proceed with new space initiatives in future years. This effort includes, but is not limited to, materials development, the technology for designing, building and controlling large structures, propulsion systems, and the advancement of communications and data systems. It is directly applicable to Shuttle extension initiatives as well as to those originating in the space science and applications programs. The committee reiterates the importance of the administration devising longer term space goals in order that these research programs can be directed in a productive and coordinated manner.

The House also added \$3 million to the space research and technology program for similar purposes.

ENERGY TECHNOLOGY APPLICATIONS, \$4,000,000

COMMITTEE COMMENT

The committee supports fully the energy technology identification and verification activities conducted under this program. It is clear from the volume of NASA activity for DOE alone that the small investment in these energy technology initiatives pays substantial dividends to the national energy effort, and, therefore, that some increased annual investment is warranted to seek out and verify additional energy potentials in aerospace technologies. Accordingly, the committee recommends an increase of \$1 million to the NASA request for a total authorized program of \$4 million.

The committee did not concur with the action of the House in adding \$3 million to the program for technology advancement to resolve economic and environmental issues surrounding the satellite solar power system (SPS). The SPS is a terrestrial energy application—the responsibility for which is assigned to the Department of Energy by the Energy Reorganization Act of 1974. A joint DOE/NASA SPS concept development and evaluation program has been initiated with completion scheduled for June 1980. All funding for this activity for fiscal year 1979 and subsequent years is provided by DOE. DOE

witnesses testified that the technical, environmental, social or other barriers, if any, to an SPS must be identified before committing further to the concept. This is the purpose of the joint study following completion of which, DOE witnesses further testified, a "go-no-go" decision on the SPS was intended. The committee believes that added effort authorized in the space research and technology program will support technology development activities which have application to any potential SPS as well as to primary NASA responsibilities in space research, development and applications.

TRACKING AND DATA ACQUISITION PROGRAM, \$305,400,000

COMMITTEE COMMENT

This program is essential to successful mission performance and to obtaining the science and engineering data for which substantial sums have been committed. Historically, this program budget has been well managed and fiscally constrained even as increasingly complex Earth-orbital and planetary missions impose greater performance requirements. Accordingly, the committee recommends adoption of the NASA request of \$305,400,000. This recommendation disagrees with the House cut of \$5 million in the operations budget and an addition of \$4 million to the equipment budget to initiate equipment procurement for a new Spacelab data processing center at the Goddard Space Flight Center. The Spacelab data center funding request for fiscal year 1979—\$6.6 million representing the initial increment for equipment and \$5.9 million for facility construction—was denied by the Office of Management and Budget. The committee believes that NASA should present the Spacelab facility and equipment requirements as fiscal year 1980 budget items.

CONSTRUCTION OF FACILITIES

<i>Item</i>	<i>Summary</i>	<i>Amount</i>
1.	Modification of unitary plan wind tunnel, Ames Research Center.....	\$5,390,000
2.	Modification of 3.5-foot wind tunnel, Ames Research Center.....	1,870,000
3.	Modification of 12-foot pressure wind tunnel, Ames Research Center.....	2,510,000
4.	Modifications and additions for logistic and supply functions, Goddard Space Flight Center.....	5,640,000
5.	Modifications and addition to the space flight operations facility, Jet Propulsion Laboratory.....	3,060,000
6.	Modifications to various buildings for seismic protection, Jet Propulsion Laboratory.....	1,570,000
7.	Modifications for utility control system, Langley Research Center.....	1,980,000
8.	Rehabilitation of unitary plan wind tunnel, Langley Research Center.....	4,520,000
9.	Construction of research analysis center, Lewis Research Center.....	6,140,000
10.	Large aeronautical facility: Construction of national transonic facility, Langley Research Center.....	24,500,000
11.	Large aeronautical facility: Modification of 40- by 80-foot subsonic wind tunnel, Ames Research Center.....	31,600,000
12.	Space Shuttle facilities at various locations as follows:	
	(a) Modifications to launch complex 39, John F. Kennedy Space Center.....	13,570,000
	(b) Modification of manufacturing and final assembly facilities for external tanks, Michoud Assembly Facility.....	13,980,000
	(c) Modifications to solid rocket motor manufacturing and assembly facilities, Thiokol Plant, Wasatch, Utah.....	1,920,000
	(d) Minor Shuttle-unique projects, various locations.....	1,600,000
13.	Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project.....	17,800,000
14.	Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$250,000 per project.....	4,200,000
15.	Facility planning and design not otherwise provided for.....	10,650,000

RESEARCH AND PROGRAM MANAGEMENT

Summary

Fiscal year 1979	Budget request	House action	Senate committee action
Personnel and related costs	\$695,093,000	\$695,093,000	\$695,093,000
Travel	18,741,000	18,741,000	18,741,000
Facilities services	102,841,000	102,841,000	102,841,000
Technical services	40,357,000	40,357,000	40,357,000
Administrative support	56,968,000	56,968,000	56,968,000
Total	914,000,000	914,000,000	914,000,000

The "Research and program management" appropriation includes funding for research in Government laboratories, management of programs, and other activities of the National Aeronautics and Space Administration. Principally, it is intended to: (1) Provide the civil service staff to conduct in-house research, and to plan, manage, and support the research and development programs; and (2) provide other elements of operational capability to the laboratories and facilities such as logistics support (travel and transportation, maintenance, and operation of facilities) and technical and administrative support.

Approximately three-fourths of this authorization recommendation for fiscal year 1979, or \$695,093,000, is required to pay the salaries and related personnel costs of NASA employees during the fiscal year. This amount will support 23,237 permanent positions, of which approximately 65 percent will be occupied by scientific, engineering, and supporting technician personnel. Programmatically, 19,312 employees will be assigned to space and 3,925 employees to aeronautical research activities. The recommended staffing plan for fiscal year 1979 is identical to the agency level projected for September 30, 1978, which reflects the absorption of a 500-position reduction assessed by the President during fiscal year 1978. This manpower reduction required further studies of agency responsibilities, field center functions, and management operations in addition to the agencywide roles and missions study conducted in late calendar year 1975 to eliminate any unnecessary duplication of research activities and to maximize the utilization of personnel and facilities. NASA personnel strength has declined each year from the agency high of about 33,900 in 1966, and now is at a point where its technical competence to conduct and to manage complex research activities and to effectively utilize unique national research facilities, particularly in aeronautics, appears to be threatened. The major influencing factor on funding requirements for NASA personnel is the necessity to fund the annual Federal salary increases which more than offset personnel reductions. For example, the October 1977 Federal pay increase will necessitate a supplemental appropriation for NASA of \$46,200,000 for fiscal year 1978, and increases the fiscal year 1979 funding requirement by \$50,207,000. The total NASA personnel cost estimate for fiscal year 1979 in this bill is \$2,789,000 above the current estimate for fiscal year 1978.

The remaining funding in this appropriation category is, for convenience, grouped into the functional budget categories of travel, facilities services, technical services, and administrative support for which a total of \$218,907,000 is recommended. After net adjustments, this amount is about \$21 million above the fiscal year 1978 budget plan primarily due to rising utility rates and wage increases for support contractor personnel at the several installations. NASA has underway an aggressive energy conservation and reduction program achieving a level 32 percent below fiscal year 1973; however, continuing wage increases for support contractor personnel and increases in utility rates more than offset savings originating from energy usage reductions.

COMMITTEE COMMENT

The committee has noted its concern about the absence of longer term goals for the U.S. space program. The administration is strongly urged to resolve this issue promptly. In this context, the institutional review currently being conducted by NASA assumes considerable importance. The committee believes that a statement of future goals must precede any decisions that would significantly affect NASA's institutional capability to implement these goals. Accordingly, the committee requests that it be kept informed by NASA of the status and outcome of its institutional review. The committee also emphasizes the importance of relating this review to the achievement of specific longer term goals rather than devising goals in the aftermath of the institutional review.

The long-term health of the U.S. aeronautics and space program depends on developing new generations of skilled and committed scientists and engineers. In recent years budgetary and personnel constraints have brought about reductions in NASA activities to inform and involve students in the Nation's space and aeronautics programs. At the same time, there is clear evidence of growing interest among young people to pursue careers in space and aeronautical science and engineering. Therefore, it is requested that NASA provide to the committee a comprehensive survey of its student programs and further that NASA review and develop options for expanding student involvement, such as providing for student internships along the lines of the successful Skylab and Viking student participation programs. In developing these options for committee consideration, NASA should seek out the advice and expertise of other Federal agencies, such as the National Science Foundation and the U.S. Office of Education, and should provide for participation by students with handicaps as well as by females and by those from minority groups.

ESTIMATED COSTS

The NASA request for new budget authority for fiscal year 1979 was \$4,371,600,000. This bill, H.R. 11401, as recommended by the committee, authorizes appropriations to the National Aeronautics and Space Administration in the amount of \$4,388,600,000 for that fiscal period. This amount is \$17 million above the budget request.

In accordance with the requirements of section 252(a) of the Legislative Reorganization Act of 1970, the estimates for the next 5 years of NASA budget authority are as follows:

(In millions of dollars)		
Fiscal year:	NASA estimate	Committee estimate
1979.....	4,372	4,389
1980.....	4,550	4,628
1981.....	4,200	4,321
1982.....	3,540	3,660
1983.....	3,227	3,346

The above estimates are future funding requirements for the continuation or completion of the NASA programs (including the development and production of the Space Shuttle) provided for in this bill. No provision is made for the initiation of new programs and projects after fiscal year 1979. Further, these estimates do not provide for administrative adjustments that may be required, and, except for some allowance in selected program areas in fiscal year 1980, no provision is made for the impact of inflation beyond fiscal year 1979. Future year budgets must, of necessity, reflect the foregoing adjustments and in addition, will undoubtedly include requests for new programs and projects as currently approved activities are completed. The Congress will have an opportunity to exercise its judgment on these new programs and projects when authority and funds are requested to proceed with them. The committee does expect, however, that the budgets for the fiscal years through 1983 will approximate \$4.45 billion, in current year dollars, as new initiatives are proposed from studies currently underway and as developments demonstrate the need for and the worthiness of new starts in space science, space applications, and aeronautics, building on and capitalizing on the data and experience already acquired.

With respect to section 308(a) of the Congressional Budget Act of 1974, a concurrent resolution pertaining to this authorization for fiscal year 1979 has not been agreed to. However, Senate Concurrent Resolution 80 would establish a level of \$5.2 billion for Function 250 within which \$3.849 billion would be allocated for NASA space activities (Mission 2). This bill would authorize \$3.867 billion for these activities, a nominal amount of \$18 million above the subtotal for space but within the \$5.2 billion for Function 250 when the Budget Committee's rounding criteria is applied. The remaining amount in this bill, \$522 million, falls within Function 400 with a total Senate Concurrent Resolution 80 recommendation of \$19.5 billion, a level which, the committee believes, can accommodate the funding for aeronautical research activities in this bill.

This bill contains no budget authority to provide financial assistance to State and local governments.

The Congressional Budget Office has submitted to the committee its estimate on this bill pursuant to section 403 of the Congressional Budget and Impoundment Control Act of 1974. The CBO submission of April 25, 1978, follows:

CONGRESSIONAL BUDGET OFFICE—COST ESTIMATE

APRIL 25, 1978.

1. Bill number: H.R. 11401.
2. Bill title: National Aeronautics and Space Administration Authorization Act of 1979.
3. Bill status: As ordered reported by the Senate Committee on Commerce, Science, and Transportation, April 25, 1978.
4. Bill purpose: This bill authorizes appropriations for the National Aeronautics and Space Administration for fiscal year 1979.
5. Cost estimate:

(By fiscal years, in millions of dollars)

	1979	1980	1981	1982	1983
Authorization level:					
Function 250.....	3,866.8				
Function 400.....	521.8				
Total.....	4,388.6				
Estimated cost:					
Function 250.....	2,937.3	767.1	151.1	9.4	1.8
Function 400.....	291.0	165.0	40.4	17.9	7.6
Total.....	3,228.3	932.1	191.5	27.3	9.4

6. Basis of estimate: The authorization level is that stated in the bill. All funds authorized are assumed to be appropriated. Estimated annual costs are based on the historical spendout patterns of the major programs.

7. Estimate comparison: None.

8. Previous CBO estimate: On March 13, 1978, CBO transmitted a cost estimate for H.R. 11401, the National Aeronautics and Space Administration Authorization Act of 1979 as ordered reported by the House Committee on Science and Technology. The House version of H.R. 11401 authorizes approximately \$27 million more for fiscal year 1979 than this bill, resulting in estimated outlays of \$10 million more in fiscal year 1979.

9. Estimate prepared by: Mark Berkman.

10. Estimate approved by:

C. G. NUCKOLS,
(For James L. Blum,
Assistant Director for Budget Analysis).

LEGISLATIVE CHANGES

The committee considered several legislative amendments in its action on this NASA authorization bill.

The committee amended section 1(b)(10) to designate as individual line items the facility projects authorizing the third increments of construction of the national transonic facility and the modification of the 40- by 80-foot subsonic wind tunnel. These line items are identified as 1(b) (10) and (11), respectively, in the bill. While these projects are both designed to support aeronautical research, they are major individual, unrelated and separate undertakings and, therefore, the committee believes they should be reflected as individual line items rather than grouped under one line in the bill. The succeeding line items in section 1(b) were renumbered to conform to this change. The House, bill H.R. 11401, differs from the committee recommendation in this respect.

The committee amended section 6 to substitute preferred language to modify section 203 of the National Aeronautics and Space Act of 1958, as amended, to provide a consistent lettering system and correct mislettering which resulted from enactment of Public Law 94-413. The House included an identical provision in its bill.

The committee deleted section 7 of S. 2527 which would have authorized to NASA total amounts for each appropriations category for fiscal year 1980. Since separate legislative action will be undertaken on the fiscal year 1980 authorization request, no action is necessary at this time. There is no provision for fiscal year 1980 authorizations in the House bill.

The House adopted, as section 7 of its bill H.R. 11401, a provision amending sections 102 and 203 of the National Aeronautics and Space Act of 1958, as amended, directing NASA to carry out research, development, demonstrations and other activities in bioengineering to assist handicapped individuals and lessen or alleviate the problems caused by disability. The committee considers that the conduct of such activities by NASA to the extent desired and appropriate is embodied in the Act as now constituted.

The House adopted, as section 8 of its bill H.R. 11401, a floor amendment requiring the Administrator of NASA to report, by December 31, 1978, to the respective authorizing committees of the House and the Senate on NASA policy regarding conflicts of interest, standards of conduct and financial disclosure and the implementation of that policy. The committee took no action on this provision.

REGULATORY IMPACT STATEMENT

This bill authorizes the appropriations of funds for the conduct of space and aeronautical research and development activities to carry out the policy and purpose of the National Aeronautics and Space Act of 1958. These activities are conducted in NASA laboratories by NASA personnel and through contracts with industry, universities and research institutions for research and development and for supporting scientific and technical services. The committee has concluded the nature of these activities is such that there is no regulatory impact on individuals and businesses and, therefore, it is impracticable to include in this report a regulatory impact evaluation as set forth in paragraph 5(a), rule XXIX of the Standing Rules of the Senate.

SECTION-BY-SECTION ANALYSIS

Section 1

Subsections (a), (b), and (c) authorize to be appropriated to the National Aeronautics and Space Administration funds, in the total amount of \$4,388,600,000, as follows: (a) for "Research and development," a total of 12 program line items aggregating the sum of \$3,322,100,000; (b) for "Construction of facilities," a total of 15 line items aggregating the sum of \$152,500,000; and (c) for "Research and program management," \$914 million. Subsection (c) also authorizes to be appropriated such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

Subsection 1(d) authorizes the use of appropriations for "Research and development" without regard to the provisions of subsection 1(g) for: (1) items of a capital nature (other than the acquisition of land) required at locations other than NASA installations for the performance of research and development contracts; and (2) grants to non-profit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities. Title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Moreover, each such grant shall be made under such conditions as the Administrator shall find necessary to insure that the United States will receive benefit therefrom adequate to justify the making of that grant.

In either case no funds may be used for the construction of a facility in accordance with this subsection, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator notifies the Speaker of the House, the President of the Senate and the specified committees of the Congress of the nature, location, and estimated cost of such facility.

Subsection 1(e) provides that, when so specified and to the extent provided in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) contracts for maintenance and operation of facilities, and support services may be entered into under the "Research and program management" appropriation for periods not in excess of 12 months beginning at any time during the fiscal year.

Subsection 1(f) authorizes the use of not to exceed \$25,000 of the "Research and program management" appropriation for scientific consultations or extraordinary expenses, including representation and official entertainment expenses, upon the authority of the Administrator, whose determination shall be final and conclusive.

Subsection 1(g) provides that of the funds appropriated for "Research and development" and "Research and program management" not in excess of \$25,000 per project (including collateral equipment) may be used for construction of new, or additions to existing facilities, and not in excess of \$50,000 per project (including collateral equipment) may be used for rehabilitation or modification of existing facilities; however, of the funds appropriated for "Research and

development," not in excess of \$250,000 per project (including collateral equipment) may be used for construction of new facilities or additions to, or rehabilitation or modification of, existing facilities required for unforeseen programmatic needs.

Section 2

Section 2 authorizes upward variations of the sums authorized for the "Construction of facilities" line items (other than facility planning and design) of 10 percent at the discretion of the Administrator or his designee, or 25 percent following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, for the purpose of meeting unusual cost variations. However, the total cost of all work authorized under these line items may not exceed the total sum authorized for "Construction of facilities" under subsection 1(b), paragraphs (1) through (14).

Section 3

Section 3 provides that not more than one-half of 1 percent of the funds appropriated for "Research and development" may be transferred to the "Construction of facilities" appropriation and, when so transferred, together with \$10 million of the funds appropriated for "Construction of facilities," shall be available for the construction of facilities and land acquisition at any location if the Administrator determines (1) that such action is necessary because of changes in the aeronautical and space program or new scientific or engineering developments, and (2) that deferral of such action until the next authorization act is enacted would be inconsistent with the interest of the Nation in aeronautical and space activities. However, no such funds may be obligated until 30 days have passed after the Administrator or his designee has transmitted to the Speaker of the House, the President of the Senate and the specified committees of Congress a written report containing a description of the project, its cost, and the reason why such project is necessary in the national interest, or each such committee before the expiration of such 30-day period has notified the Administrator that no objections to the proposed action will be made.

Section 4

Section 4 provides that, notwithstanding any other provision of this act—

(1) No amount appropriated pursuant to this act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation;

(2) No amount appropriated pursuant to this act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c); and

(3) No amount appropriated pursuant to this act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House, the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Section 5

Section 5 expresses the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Section 6

Section 6 amends the National Aeronautics and Space Act, as amended, to provide a consistent lettering system and correct mislettering which resulted from enactment of Public Law 94-413.

Section 7

Section 7 provides that the act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1979".

ROLLCALL VOTES IN COMMITTEE

Two record votes were taken during consideration of the fiscal year 1979 NASA authorization request by the Committee on Commerce, Science, and Transportation in executive session on April 25, 1978.

The first vote was on a motion by Senator Schmitt to amend the subcommittee recommendation of \$314.9 million for the space flight operations program increasing the program total by \$4 million to \$318.9 million for additional work on advanced programs.

YEAS	NAYS
Magnuson	Cannon
Hollings	Stevenson
Ford	Goldwater
Zorinsky	
Schmitt	

The second vote was on a motion by Senator Schmitt to amend the subcommittee recommendation of \$4 million for the energy technology applications program increasing the program total by \$2 million to \$6

million for additional energy technology identification and verification activities.

YEAS	NAYS
Hollings	Cannon
Ford	Magnuson
Zorinsky	Stevenson
Schmitt	Goldwater

SPACE BUDGETS OF OTHER AGENCIES

The following table, the source for which is the Office of Management and Budget, shows new budget authority of all Government agencies:

SPACE ACTIVITIES OF THE GOVERNMENT—HISTORICAL SUMMARY AND FISCAL YEAR 1979 BUDGET RECOMMENDATIONS¹

(In millions of dollars)

	NASA		Department					NSF	Total space ²
	Total	Space ³	Defense	Energy	Com- merce	Interior	Agric- ulture		
1955	56.9	56.9	3.0					59.6	
1956	72.7	72.7	30.3	7.0			7.3	117.3	
1957	78.2	78.2	71.0	21.3			8.4	178.5	
1958	117.3	117.3	205.6	21.3			3.3	347.9	
1959	330.9	260.9	489.5	34.3				784.7	
1960	323.6	461.5	560.9	43.3			.1	1,065.8	
1961	964.0	926.0	813.9	67.7			.6	1,808.2	
1962	1,824.9	1,796.8	1,298.2	147.8	50.7		1.3	3,294.6	
1963	3,673.0	3,626.0	1,549.9	213.9	43.2		1.5	5,434.5	
1964	5,099.7	5,016.3	1,593.9	210.0	2.8		3.0	6,831.4	
1965	5,249.7	5,137.6	1,573.9	228.6	12.2		3.2	6,955.5	
1966	5,174.9	5,064.5	1,688.8	186.8	26.5		3.2	6,969.8	
1967	4,965.6	4,830.2	1,663.6	183.6	29.3		2.8	6,741.5	
1968	4,587.3	4,430.0	1,921.8	145.1	28.1	.2	5	6,551.4	
1969	3,990.9	3,822.0	2,013.0	118.0	20.0	.2	.7	5,975.8	
1970	3,745.8	3,547.0	1,678.4	102.8	8.0	1.1	.8	5,340.5	
1971	3,311.2	3,101.3	1,512.3	94.8	27.4	1.9	.8	4,740.9	
1972	3,306.6	3,071.0	1,407.0	55.2	31.3	5.8	1.6	4,574.7	
1973	3,406.2	3,093.2	1,523.0	54.2	39.7	10.3	1.9	4,824.8	
1974	3,036.9	2,758.5	1,766.0	41.7	60.2	9.0	3.1	4,640.3	
1975	3,229.1	2,915.3	1,892.4	29.6	64.4	8.3	2.3	4,914.3	
1976	3,550.3	3,225.4	1,983.3	23.3	71.5	10.4	3.6	5,319.9	
7Q ⁴	931.8	849.2	450.4	4.6	22.2	2.6	.9	1,340.5	
1977	3,817.8	3,440.2	2,411.9	21.7	90.8	9.5	6.3	5,982.8	
Budget:									
1978 estimate ⁵	4,062.8	3,621.7	2,713.8	34.4	93.8	9.7	7.7	6,483.5	
1979 estimate ⁵	4,370.3	3,848.5	3,364.9	43.0	97.8	9.7	7.9	7,374.2	

¹ Historical amounts are estimates based on best data available.

² Excludes amounts for aircraft technology in 1959 and succeeding years. Amounts for NASA-NACA aircraft and space activities not separately identifiable prior to 1958.

³ Adjusted for net offsetting receipts.

⁴ Truncated quarter.

⁵ May not add due to rounding.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION, FISCAL YEAR 1979

AUGUST 17 (legislative day, AUGUST 16), 1978.—Ordered to be printed

Mr. TEAGUE, from the committee of conference, submitted the following

CONFERENCE REPORT

[To accompany H.R. 11401]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 11401) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment insert the following:

That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1978:

(a) For "Research and development", for the following programs:

- (1) Space Shuttle, \$1,443,300,000;
- (2) Space flight operations, \$315,900,000;
- (3) Expendable launch vehicles, \$74,000,000;
- (4) Physics and astronomy, \$285,500,000;
- (5) Lunar and planetary exploration, \$187,100,000;
- (6) Life sciences, \$42,600,000;
- (7) Space applications, \$280,300,000;
- (8) Technology utilization, \$12,100,000;
- (9) Aeronautical research and technology, \$275,100,000;
- (10) Space research and technology, \$111,300,000;

(11) Energy technology applications, \$5,000,000; and
 (12) Tracking and data acquisition, \$305,400,000;
 (b) For "Construction of facilities", including land acquisition, as follows:

- (1) Modification of unitary plan wind tunnel, Ames Research Center, \$5,390,000;
 - (2) Modification of 3.5-foot wind tunnel, Ames Research Center, \$1,870,000;
 - (3) Modification of 12-foot pressure wind tunnel, Ames Research Center, \$2,510,000;
 - (4) Modifications and additions for logistic and supply functions, Goddard Space Flight Center, \$5,640,000;
 - (5) Modifications and addition to the space flight operations facility, Jet Propulsion Laboratory, \$3,060,000;
 - (6) Modifications to various buildings for seismic protection, Jet Propulsion Laboratory, \$1,570,000;
 - (7) Modifications for utility control system, Langley Research Center, \$1,980,000;
 - (8) Rehabilitation of unitary plan wind tunnel, Langley Research Center, \$4,520,000;
 - (9) Construction of research analysis center, Lewis Research Center, \$6,140,000;
 - (10) Large aeronautical facility: construction of national transonic facility, Langley Research Center, \$24,500,000;
 - (11) Large aeronautical facility: modification of 40- by 80-foot subsonic wind tunnel, Ames Research Center, \$31,600,000;
 - (12) Space Shuttle facilities at various locations as follows:
 - (A) Modifications to launch complex 39, John F. Kennedy Space Center, \$13,570,000;
 - (B) Modification of manufacturing and final assembly facilities for external tanks, Michoud Assembly Facility, \$13,980,000;
 - (C) Modifications to solid rocket motor manufacturing and assembly facilities, Thiokol Plant, Wasatch, Utah, \$1,920,000;
 - (D) Minor Shuttle-unique projects, various locations, \$1,600,000;
 - (13) Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project, \$15,300,000;
 - (14) Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$250,000 per project, \$4,200,000; and
 - (15) Facility planning and design not otherwise provided for, \$10,650,000;
- (c) For "Research and program management", \$914,000,000, and such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.
- (d) Notwithstanding the provisions of subsection 1(g), appropriations for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit

organisations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate of the nature, location, and estimated cost of such facility.

(e) When so specified and to the extent provided in an appropriation act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of 12 months beginning at any time during the fiscal year.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed \$25,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

(g) Of the funds appropriated pursuant to subsections 1(a) and 1(c), not in excess of \$25,000 for each project, including collateral equipment, may be used for construction of new facilities and additions to existing facilities, and not in excess of \$50,000 for each project, including collateral equipment, may be used for rehabilitation or modification of facilities: Provided, That of the funds appropriated pursuant to subsection 1(a), not in excess of \$250,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs.

SEC. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1) through (14), inclusive, of subsection 1(b)—

(1) in the discretion of the Administrator or his designee, may be varied upward 10 percent, or

(2) following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, may be varied upward 25 percent,

to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

SEC. 3. Not to exceed one-half of 1 percent of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the "Construction of facilities" appropriation, and, when so transferred, together with \$10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (15) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) he determines that deferral of such action until the enactment of the next authorization act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of 30 days has passed after the Administrator or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a written report containing a full and complete statement concerning (1) the nature of such construction, expansion, or modification, (2) the cost thereof including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

SEC. 4. Notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation,

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

SEC. 5. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

SEC. 6. Section 203 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2473) is amended—

(1) by inserting "(1)" after "(b)" in the subsection which was added by section 15(c) of Public Law 94-413; and

(2) by redesignating the subsection which was added by section 4 of Public Law 93-409 (and redesignated by section 15(c) of Public Law 94-413) as paragraph (2) of subsection (b).

SEC. 7. (a) Section 102 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451) is amended (1) by redesignating subsection (f) as subsection (g) thereof; and (2) by inserting immediately after subsection (e) thereof the following new subsection.

"(f) The Congress declares that the general welfare of the United States requires that the unique competence of the National Aeronautics and Space Administration in science and engineering systems be directed to assisting in bioengineering research, development, and demonstration programs designed to alleviate and minimize the effects of disability."

(b) The subsection of section 102 of such Act redesignated as subsection (g) by subsection (a) of this section is amended by striking out "and (e)" and inserting in lieu thereof "(e), and (f)".

SEC. 8. The Administrator of the National Aeronautics and Space Administration will report to the House Committee on Science and Technology and the Senate Committee on Commerce, Science, and Transportation no later than December 31, 1978, on the Administration policy regarding conflicts of interest, standards of conduct and financial disclosure and the implementation of that policy.

SEC. 9. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1979".

And the Senate agree to the same.

OLIN TEAGUE,
DON FUQUA,
ROBERT A. ROE,
DALE MILFORD,
JIM LLOYD,
JOHN WYDLER,
LARRY WINN, JR.

Managers on the Part of the House.

HOWARD W. CANNON,
WARREN G. MAGNUSON,
ADLAI E. STEVENSON,
WENDELL H. FORD,
BARRY GOLDWATER,
HARRISON SCHMITT,

Managers on the Part of the Senate.

JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 11401) to authorize appropriations to the National Aeronautics and Space Administration for fiscal year 1979 for Research and Development, Construction of Facilities, and Research and Program Management, and for other purposes, submit the following joint statement to the House and the Senate in explanation of the effect of the action agreed upon by the managers and recommended in the accompanying conference report.

The NASA request for fiscal year 1979 totaled \$4,371,600,000. The House authorized \$4,415,300,000 and the Senate amendment authorized \$4,388,600,000. The committee of conference agrees to a total authorization for fiscal year 1979 of \$4,401,600,000 as follows:

SUMMARY, FISCAL YEAR 1979

Fiscal year 1979	Budget request	House action	Senate committee action	Committee of conference
Research and development:				
Space Shuttle.....	\$1,439,300,000	\$1,443,300,000	\$1,443,300,000	\$1,443,300,000
Space flight operations.....	311,900,000	308,900,000	318,900,000	315,900,000
Expendable launch vehicles.....	76,500,000	71,500,000	76,500,000	74,000,000
Physics and astronomy.....	285,500,000	285,500,000	285,500,000	285,500,000
Lunar and planetary exploration.....	187,100,000	187,100,000	187,100,000	187,100,000
Life sciences.....	40,600,000	40,600,000	42,600,000	42,600,000
Space applications.....	274,300,000	288,300,000	274,300,000	280,300,000
Technology utilization.....	9,100,000	14,600,000	9,100,000	12,100,000
Aeronautical research and technology.....	264,100,000	292,300,000	264,100,000	275,100,000
Space research and technology.....	108,300,000	111,300,000	111,300,000	111,300,000
Energy technology applications.....	3,000,000	6,000,000	4,000,000	5,000,000
Tracking and data acquisition.....	305,400,000	304,400,000	305,400,000	305,400,000
Total.....	3,305,100,000	3,353,900,000	3,322,100,000	3,337,600,000
Construction of facilities.....	152,500,000	147,500,000	152,500,000	150,000,000
Research and program management.....	914,000,000	914,000,000	914,000,000	914,000,000
Grand total.....	4,371,600,000	4,415,300,000	4,388,600,000	4,401,600,000

The points in disagreement and the conference resolution of them are as follows:

1. NASA requested \$311,900,000 for the space flight operations program.

The House authorized \$308,900,000, a reduction of \$3 million in the request resulting from a \$10 million cut in the development, test and mission operations subprogram and the addition of \$7 million to the advanced programs subprogram.

The Senate authorized \$318,900,000, agreeing with the NASA request for the development, test and mission operations subprogram as necessary to support shuttle development and other space flight activity, and adding \$7 million to the NASA request increasing the amount for advanced programs from \$5 million to \$12 million.

The conference substitute authorizes \$315,900,000 for the space flight operations program.

The conferees are concerned that the subprogram categories within the space flight operations program are not sufficient to serve budgeting and costing policies as the space shuttle development effort declines and new projects, including shuttle operations, command a larger share of technical support resources provided under this program. Of particular concern is the need to assure that all appropriate costs are allocated to shuttle operations so that all users bear an equitable share of the cost of technical support. Accordingly, the conferees request that the budget categories in this program be reviewed and that changes be made so costs are related as precisely as possible to the program activities which they support. The fiscal year 1980 budget presentation should reflect this request.

2. The House authorized \$71,500,000 for the expendable launch vehicles program, a reduction of \$5 million in the NASA request, believing that the phaseout of these vehicles in favor of the shuttle presented opportunities for economies.

The Senate approved the NASA request of \$76,500,000 noting the importance of adequate technical and other support to assure successful launch performance for expensive payloads.

The committee of conference authorizes \$74 million for the expendable launch vehicles program.

3. NASA requested \$40,600,000 for the life sciences program.

The House authorized the NASA request.

The Senate authorized \$42,600,000, increasing the NASA request by \$2 million for additional work on life science experiments for the spacelab program.

The conference substitute authorizes \$42,600,000.

4. The House authorized \$288,300,000 for the space applications program, an increase of \$14 million in the NASA request of \$274,300,000. Of the \$14 million increase, the House allocated \$10 million to augment earth resources applications transfer and demonstration activities, including support to State and private sector users, with the remaining \$4 million to be used to initiate development of a stereosat remote sensing satellite system contingent upon industrial financial participation in the project.

The Senate authorized the NASA request, \$274,300,000.

The conference substitute authorizes \$280,300,000 for the space applications program.

The conferees request that NASA, utilizing not to exceed \$1 million of the funds authorized for the space applications program, resume definition studies for a stereosat spacecraft system in preparation for initiation of the project in the fiscal year 1980 budget. The conferees agree that such a project initiation is to be contingent upon agreement with industry for substantial cost participation therein, and request NASA to continue its current efforts to achieve such an agreement as expeditiously as possible.

5. NASA requested \$9,100,000 for the technology utilization program.

The House authorized \$14,600,000, an increase of \$5,500,000 of which \$1,500,000 was to increase the scope and effectiveness of industrial applications centers, dissemination mechanisms and other aspects of the

program, and of which \$4 million was to be used to support the maintenance of aggressive programs in bioengineering applications in the areas of materials, human factors engineering and electronics to assist the handicapped and to alleviate the problems of the disabled.

The Senate authorized the NASA request noting that a collaborative study effort involving NASA and several other agencies is underway to examine and better understand the technology transfer process to determine how and where additional resources could be productively applied, and also noting that NASA has supported for several years a biomedical applications activity addressing problems of the handicapped as well as other medical problems and that \$1,700,000 is authorized to continue such activities.

The conference substitute authorizes \$12,100,000 for the technology utilization program.

The conferees agree that NASA should increase the scope of the industrial applications centers and maintain an aggressive program for transferring its technology to bioengineering applications. These applications should be directed to aiding the handicapped, utilizing NASA's unique competence and expertise in materials, human factors engineering, electronics and automated systems. The conferees agree further that NASA shall enhance its working relationships with the Department of Health, Education, and Welfare, the Veterans Administration, and other interested agencies of the Government to assure that the maximum benefit to the handicapped results from these activities.

6. NASA requested \$264,100,000 for the aeronautical research and technology program.

The House authorized \$292,300,000 for this program, an increase of \$28,200,000. Of the increase, \$26,700,000 was to be applied to restore an OMB reduction in work on composite primary aircraft structures, and \$1,500,000 was to establish a subline item for aerial applications technology. Also the House added \$12 million to accelerate the variable cycle engine and supersonic cruise aircraft research programs, offsetting the addition with an equivalent reduction from the near-term components of the engine components improvement and the energy efficient transport programs.

The Senate authorized \$264,100,000, the NASA request, to permit time for further study of the problem of "free-floating" graphite fibers used in the fabrication of composite structures and to provide funds for the aircraft energy efficiency program at the level requested by NASA. The Senate also requested NASA to provide for continuation of its aerial applications technology activity after fiscal year 1979.

The conference substitute authorizes \$275,100,000 for the aeronautical research and technology program.

The committee of conference agrees to support the NASA budget request, together with an increase of \$11 million to be applied on a priority basis to variable cycle engine/supersonic cruise technology, aerial applications technology, and composite materials technology, for a total authorization of \$275,100,000 for the aeronautical research and technology program.

The conferees also urge NASA to review the near-term vs. far-term balance of the aeronautical research and technology program with a view toward achieving a greater emphasis on far-term work.

7. The House increased the NASA request of \$3 million for the energy technology applications program by \$3 million for space-related technology advancement for the solar power satellite (SPS) concept.

The Senate authorized \$4 million for this program, increasing the NASA request by \$1 million to support additional activity to identify and verify potential contributions to national energy needs. The Senate noted that a joint Department of Energy/NASA SPS concept development and evaluation program is underway and that funding for this and related SPS activities is the responsibility of the Department of Energy.

The conference substitute authorizes \$5 million for the energy technology applications program.

8. NASA requested \$305,400,000 for the tracking and data acquisition program.

The House authorized \$304,400,000, a decrease of \$1 million from the request, the net result of a \$5 million cut to assure full advantage is taken of cost reduction opportunities in network operations, and the addition of \$4 million to initiate development of and equipment procurement for a new spacelab data processing center at the Goddard Space Flight Center.

The Senate authorized \$305,400,000, the NASA request, believing that full funding of network operations is essential to mission success and that the spacelab data center, for which significant research and development and construction of facilities funds are required, should be presented in the fiscal year 1980 budget.

The conference substitute authorizes \$305,400,000 for the tracking and data acquisition program.

The conferees agree that NASA may utilize to the extent required up to \$4 million of the funds authorized in the operations subprogram for the development and procurement of long leadtime items of equipment for a spacelab data processing center.

9. The House reduced the NASA request for the rehabilitation and modification of facilities line item by \$5 million, reducing it from \$17,800,000 to \$12,800,000, indicating that several projects did not appear to be high priority for fiscal year 1979 authorization.

The Senate authorized \$17,800,000, the NASA request, noting the importance of this line item to maintaining the \$6.1 billion NASA plant investment, upgrading facilities to support new technologies and changing missions, and to attacking special problems such as energy conservation.

The committee of conference authorizes \$15,300,000 for the rehabilitation and modification of facilities line item.

10. The House bill consolidated the two construction of facilities projects for large aeronautical facilities in subsection 1(b)(10), designating them as items (10)(A) and (10)(B), respectively.

The Senate amendment established each of these projects as an individual line item within the construction of facilities subsection

noting they are major, individual, unrelated and separate undertakings, and believing they should be presented accordingly. The remaining line items in subsection 1(b) were renumbered to conform with this change.

The committee of conference adopts the Senate position.

11. The House bill, in section 7, included complementary amendments to sections 102 and 203 of the National Aeronautics and Space Act of 1958, as amended, directing NASA to carry out research, development, demonstrations, and related activities in bioengineering to assist handicapped individuals and lessen or alleviate the problems of disability.

The Senate did not include an equivalent section in its amendment noting that the conduct of such activities by NASA, to the extent desired and appropriate, is embodied in the Space Act as now constituted.

The conference substitute adopts a section 7 amending section 102 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451), as amended, to declare that NASA competence in science and engineering should be used to assist in bioengineering research, development and demonstration programs to alleviate and minimize the effects of disability.

12. The House adopted, as section 8 of its bill, a provision requiring the Administrator of NASA to report, by December 31, 1978, to the respective authorizing committees of the House and the Senate on NASA policy regarding conflicts of interest, standards of conduct, and financial disclosure and the implementation of that policy.

The Senate amendment to the bill did not include a comparable provision.

The committee of conference adopts the House position including the House provision as section 8 of the conference substitute.

OLIN TEAGUE,
DON FUQUA,
ROBERT A. ROE,
DALE MILFORD,
JIM LLOYD,
JOHN WYDLER,
LARRY WINN, Jr.,

Managers on the Part of the House.

HOWARD W. CANNON,
WARREN G. MAGNUSON,
ADLAI E. STEVENSON,
WENDELL H. FORD,
BARRY GOLDWATER,
HARRISON SCHMITT,

Managers on the Part of the Senate.

○

PUBLIC LAW 95-401—SEPT. 30, 1978

92 STAT. 857

92 STAT. 858

PUBLIC LAW 95-401—SEPT. 30, 1978

Public Law 95-401
95th Congress

An Act

To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes.

Sept. 30, 1978
[H.R. 11401]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1978:

(a) For "Research and development", for the following programs:

- (1) Space Shuttle, \$1,443,300,000;
- (2) Space flight operations, \$315,900,000;
- (3) Expendable launch vehicles, \$74,000,000;
- (4) Physics and astronomy, \$285,500,000;
- (5) Lunar and planetary exploration, \$187,100,000;
- (6) Life sciences, \$42,600,000;
- (7) Space applications, \$280,300,000;
- (8) Technology utilization, \$12,100,000;
- (9) Aeronautical research and technology, \$275,100,000;
- (10) Space research and technology, \$111,300,000;
- (11) Energy technology applications, \$5,000,000; and
- (12) Tracking and data acquisition, \$305,400,000;

(b) For "Construction of facilities", including land acquisition, as follows:

- (1) Modification of unitary plan wind tunnel, Ames Research Center, \$5,390,000;
- (2) Modification of 3.5-foot wind tunnel, Ames Research Center, \$1,870,000;
- (3) Modification of 12-foot pressure wind tunnel, Ames Research Center, \$2,510,000;
- (4) Modifications and additions for logistic and supply functions, Goddard Space Flight Center, \$5,640,000;
- (5) Modifications and addition to the space flight operations facility, Jet Propulsion Laboratory, \$3,060,000;
- (6) Modifications to various buildings for seismic protection, Jet Propulsion Laboratory, \$1,570,000;
- (7) Modifications for utility control system, Langley Research Center, \$1,980,000;
- (8) Rehabilitation of unitary plan wind tunnel, Langley Research Center, \$4,520,000;
- (9) Construction of research analysis center, Lewis Research Center, \$6,140,000;
- (10) Large aeronautical facility; construction of national transonic facility, Langley Research Center, \$24,500,000;
- (11) Large aeronautical facility; modification of 40- by 80-foot subsonic wind tunnel, Ames Research Center, \$31,600,000;
- (12) Space Shuttle facilities at various locations as follows:
 - (A) Modifications to launch complex 39, John F. Kennedy Space Center, \$13,570,000;

National
Aeronautics and
Space
Administration
Authorization
Act, 1979.
Research and
development.

Construction
of facilities.

Research and
program
management.

Program
specifications.

Notice to
Speaker of the
House, President
of the Senate,
and congressional
committees.

Scientific
consultations or
extraordinary
expenses.

(B) Modification of manufacturing and final assembly facilities for external tanks, Michoud Assembly Facility, \$13,980,000;

(C) Modifications to solid rocket motor manufacturing and assembly facilities, Thiokol Plant, Wasatch, Utah, \$1,920,000;

(D) Minor Shuttle-unique projects, various locations, \$1,600,000;

(13) Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project, \$15,300,000;

(14) Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$250,000 per project, \$4,200,000; and

(15) Facility planning and design not otherwise provided for, \$10,650,000;

(c) For "Research and program management", \$914,000,000, and such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

(d) Notwithstanding the provisions of subsection 1(g), appropriations for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate of the nature, location, and estimated cost of such facility.

(e) When so specified and to the extent provided in an appropriation act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of 12 months beginning at any time during the fiscal year.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed \$25,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

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92 STAT. 859

(g) Of the funds appropriated pursuant to subsections 1(a) and 1(c), not in excess of \$25,000 for each project, including collateral equipment, may be used for construction of new facilities and additions to existing facilities, and not in excess of \$50,000 for each project, including collateral equipment, may be used for rehabilitation or modification of facilities: *Provided*, That of the funds appropriated pursuant to subsection 1(a), not in excess of \$250,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs.

SEC. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1) through (14), inclusive, of subsection 1(b)—

(1) in the discretion of the Administrator or his designee, may be varied upward 10 percent, or

(2) following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, may be varied upward 25 percent,

to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

SEC. 3. Not to exceed one-half of 1 percent of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the "Construction of facilities" appropriation, and, when so transferred, together with \$10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (15) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) he determines that deferral of such action until the enactment of the next authorization act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of 30 days has passed after the Administrator or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a written report containing a full and complete statement concerning (1) the nature of such construction, expansion, or modification, (2) the cost thereof including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Limitations.

Construction cost variations.

Report to congressional committees.

Transfer of funds.

Report to Speaker of the House, President of the Senate, and congressional committees.

92 STAT. 860

Use of funds, restrictions.

Notice to Speaker of the House and President of the Senate and congressional committees.

Research funds, geographical distribution.
42 USC 2459 note.

42 USC 2473.

42 USC 2473.

Bioengineering research, development, and demonstration programs.

Report to congressional committees.
42 USC 2462 note.

PUBLIC LAW 95-401—SEPT. 30, 1978

SEC. 4. Notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation,

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

SEC. 5. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

SEC. 6. Section 203 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2473) is amended—

(1) by inserting "(1)" after "(b)" in the subsection which was added by section 15(c) of Public Law 94-413; and

(2) by redesignating the subsection which was added by section 4 of Public Law 93-409 (and redesignated by section 15(c) of Public Law 94-413) as paragraph (2) of subsection (b).

SEC. 7. (a) Section 102 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451) is amended (1) by redesignating subsection (f) as subsection (g) thereof; and (2) by inserting immediately after subsection (e) thereof the following new subsection.

"(f) The Congress declares that the general welfare of the United States requires that the unique competence of the National Aeronautics and Space Administration in science and engineering systems be directed to assisting in bioengineering research, development, and demonstration programs designed to alleviate and minimize the effects of disability."

(b) The subsection of section 102 of such Act redesignated as subsection (g) by subsection (a) of this section is amended by striking out "and (e)" and inserting in lieu thereof "(e), and (f)".

SEC. 8. The Administrator of the National Aeronautics and Space Administration will report to the House Committee on Science and Technology and the Senate Committee on Commerce, Science, and Transportation no later than December 31, 1978, on the Administration policy regarding conflicts of interest, standards of conduct and financial disclosure and the implementation of that policy.

PUBLIC LAW 95-401—SEPT. 30, 1978

92 STAT. 861

Sec. 9. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1979". Short title.

Approved September 30, 1978.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 95-973 (Comm. on Science and Technology) and No. 95-1509 (Comm. of Conference).

SENATE REPORTS: No. 95-799 (Comm. on Commerce, Science, and Transportation) and No. 95-1123 (Comm. of Conference).

CONGRESSIONAL RECORD, Vol. 124 (1978):

Apr. 25, considered and passed House.

May 18, considered and passed Senate, amended.

Aug. 17, Senate agreed to conference report.

Sept. 19, House agreed to conference report.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT-INDEPENDENT AGENCIES APPROPRIATION BILL, 1979

JUNE 1, 1978.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BOLAND, from the Committee on Appropriations, submitted the following

REPORT
together with
ADDITIONAL VIEWS

[To accompany H.R. 12936]

The Committee on Appropriations submits the following report in explanation of the accompanying bill making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1979, and for other purposes.

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SUMMARY OF ESTIMATES AND NEW BUDGET (OBLIGATIONAL) AUTHORITY IN BILL

Department or agency (1)	Appropriations, 1978 (2)	Budget estimates, 1979 (3)	Recommended in bill (4)	Bill compared with—	
				Appropriations, 1978 (5)	Budget estimates, 1979 (6)
American Battle Monuments Commission.....	\$6,463,000	\$6,240,000	\$6,240,000	-\$223,000	-\$100,000
Cemeterial expenses, Army.....	5,000,000	5,200,000	5,100,000	+100,000	-20,000
Consumer Information Center.....	4,700,000	1,186,000	1,166,000	-3,534,000	-20,000
Consumer Product Safety Commission.....	39,144,000	41,463,000	40,000,000	+856,000	-1,463,000
Council on Environmental Quality.....	2,854,000	3,126,000	2,926,000	+72,000	-200,000
Department of Housing and Urban Development.....	37,388,644,000	33,062,287,000	32,013,270,000	-5,375,374,000	-1,049,017,000
Department of the Treasury.....	4,263,574,000	6,863,567,000	6,863,174,000	-1,400,400,000	-393,000
Disaster Relief.....	450,000,000	200,000,000	200,000,000	-250,000,000	-
Environmental Protection Agency.....	5,478,003,000	5,675,360,000	5,374,446,000	-103,557,000	-300,914,000
Federal Home Loan Bank Board.....	(43,830,000)	(49,508,000)	(49,023,000)	(+5,193,000)	(-485,000)
National Aeronautics and Space Administration.....	4,017,940,000	4,371,600,000	4,333,890,000	+315,950,000	-37,710,000
National Commission on Air Quality.....		4,000,000	2,000,000	+2,000,000	-2,000,000
National Institute of Building Sciences.....	1,000,000		1,000,000		+1,000,000
National Science Foundation.....	861,300,000	934,000,000	893,900,000	+32,600,000	-40,100,000
Office of Consumer Affairs.....	1,750,000	1,737,000	1,700,000	-50,000	-37,000
Office of Science and Technology Policy.....	2,800,000	2,621,000	2,476,000	-324,000	-145,000
Selective Service System.....	6,300,000	8,300,000	7,045,000	+745,000	-2,455,000
Veterans Administration.....	17,779,129,000	18,335,647,000	18,460,515,000	+681,366,000	+124,864,000
Total.....	74,306,601,000	69,517,534,000	68,208,848,000	-6,098,753,000	-1,308,686,000

* Limitation on corporate funds to be expended.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1978 appropriation.....	\$3,013,000,000
Estimate, 1979.....	3,305,100,000
Recommended in bill.....	3,292,200,000
Decrease below estimate.....	-12,900,000

The Committee recommends an appropriation of \$3,292,200,000 for 1979. This is a decrease of \$12,900,000 below the budget estimate. Within the total recommended, the following changes are made from the amount requested in the budget plan:

(1) an increase of \$4,000,000 for long-lead hardware to support an optional fifth orbiter. These funds do not represent a commitment on the part of the Committee to ultimately support funding for such a vehicle. The recommendation is intended only to preserve an option. If it is concluded that the planned shuttle traffic model can be adequately supported with a four orbiter fleet, the hardware can be used for spare parts. The Committee also notes that the option for a fifth vehicle can be exercised by modifying orbiter 101 for flight.

(2) an increase of \$4,000,000 for Stereosat to provide high resolution stereoscopic coverage of the earth for mineral, petroleum and natural gas exploration.

(3) an increase of \$7,000,000 for advanced programs including \$2,000,000 for development of a 25 kilowatt power module to support longer duration shuttle flights.

(4) an additional \$3,000,000 for continued work on a solar satellite power generating system.

(5) an increase of \$7,000,000 for aeronautical research. NASA may apply these funds on a priority basis to composite technology, variable cycle engine work and agricultural aircraft.

(6) a reduction of \$1,400,000 from the Search for Extraterrestrial Life. The Committee believes this is a lower priority activity.

(7) reductions of \$10,000,000 for Development, Test and Mission operations; \$5,000,000 for Expendable Launch Vehicles; and \$1,000,000 for Tracking and Data Acquisition activities. This action is consistent with recommendations made by the House Science and Technology Committee.

(8) denial of \$20,500,000 for development of the Teleoperator Retrieval System. The Committee notes that the opportunity to use a teleoperator for a Skylab reboost/deorbit mission depends solely on the availability of the space shuttle *before* Skylab reenters the atmosphere. To assist in determining the parameters of reentry, the Committee requested an orbital decay estimate from the North American Air Defense Command (NORAD). NORAD indicated that there was a wide variation of predicted decay time—partly based on factors such as sunspot activity and the attitude of the Skylab workshop. However, using the best available estimate of solar activity, NORAD projects that Skylab will reenter between May and July of 1979. NORAD further estimates that Skylab could reenter as early as April of 1979 and as late as December of 1979.

Based on the most recent information provided the Committee concerning development problems of the shuttle main engine, it appears that the shuttle will not be available for a Skylab reboost/deorbit mission before December of 1979—or not in sufficient time to meet the mission requirement.

The Committee recognizes, however, that if Skylab is reoriented and the drag is reduced or minimized, its lifetime could be extended from four to eleven months. Therefore, the Committee will review the question of funding for this activity if it can be demonstrated that changes in Skylab decay estimates and shuttle launch capability provide a *reasonable* opportunity for a successful reboost/deorbit mission.

Finally, the Committee directs NASA to establish a contingency reserve of \$30,000,000 for a potential shortfall in shuttle funding requirements in 1979. The reserve is to be created by reducing \$15,000,000, \$10,000,000 and \$5,000,000, respectively from the 1979 requests for the Space Telescope, the Jupiter Orbiter Probe and the Solar Polar Mission. NASA is further directed not to reprogram any 1979 funds from shuttle production to shuttle development. In lieu of such action, the \$30,000,000 contingency reserve should be employed, or a supplemental estimate should be requested for shuttle funding or restoration of individual project allocations.

The Committee is concerned that the shuttle program continues to be plagued with serious funding constraints. This point is emphasized by

the fact that NASA shifted \$100,000,000 from shuttle production to shuttle development in fiscal year 1978. This had the effect of delaying orbiters 103 and 104 an additional six months and increasing the total cost of the program by \$50,000,000 to \$100,000,000.

In view of this, the Committee believes that shuttle development is in a critical phase and sufficient funds should be made available to protect an eight billion dollar investment in a fourteen billion dollar program.

CONSTRUCTION OF FACILITIES

1978 appropriation	\$160,940,000
Estimate, 1979	152,500,000
Recommended in bill	134,690,000
Decrease below estimate	-17,810,000

The Committee recommends \$134,690,000 for construction of facilities in 1979. This is a decrease of \$17,810,000 below the budget request. The funds provided are as requested with the following exceptions:

A decrease of \$12,810,000 for the second phase of Pad "B," Launch Complex 39, at the Kennedy Space Center. The Committee suggests that the second phase can be delayed one year because—

(1) the twelve year mission model has been decreased from 560 to 487 flights, and

(2) the first flight of the shuttle appears to be slipping from six to nine months.

The Committee notes that under the 560 mission model 36 flights were scheduled for launch in 1983. Two launch pads are required to support that launch rate. However, under the revised 487 mission model only 22 flights are scheduled for launch in 1983. Also, with a delay in the first shuttle launch, it is likely that the 1983 launch rate will drop back an additional two or three flights below the 22 now programmed. Therefore, a single launch pad is sufficient to support the current 1983 mission model.

A reduction of \$5,000,000 from rehabilitation and modification to conform with a similar reduction made in the 1979 House authorization bill.

In reviewing funding for the Research Analysis Center at the Lewis Research Center, the Committee has learned that NASA intends to use the lowest overall cost approach in acquiring the building and associated computer. The Agency has informed the Committee that this approach, which includes the consideration of equipment costs, conversion costs, training, maintenance, personnel, parallel run costs and other factors is designed to result in the lowest overall cost to the government. The Committee intends to monitor NASA's progress using this approach and assess its applicability to other computer acquisitions.

RESEARCH AND PROGRAM MANAGEMENT

1978 appropriation	\$844,000,000
Estimate, 1979	914,000,000
Recommended in bill	907,000,000
Decrease below estimate	-7,000,000

The Committee recommends \$907,000,000 for research and program management in 1979. This is a decrease of \$7,000,000 below the budget estimate. The reduction should be applied to lower priority activities. The Committee is also recommending language in the bill permitting the replacement of older aircraft with a more modern aircraft to provide for greater efficiency and safety.

TITLE IV—GENERAL PROVISIONS

The Committee recommends that four of the general provisions applicable to the Department and agencies carried in the current fiscal year be deleted in fiscal year 1979. No changes are recommended for the remaining sections.

The section directing that no funds may be used for unsolicited research projects unless grant recipients share the cost of the research has not been included because of information received by the Committee indicating it is an impediment to valid projects.

The section directing that no funds may be used by EPA to regulate parking not specifically required by subsequent legislation has not been included because provisions of the Clean Air Act Amendments of 1977 have addressed parking regulations.

The section directing that funds provided for certain accounts of the Department of Housing and Urban Development not be subject to regulations concerning the definition of a family eligible for admission to public housing projects has not been included because the Department has rescinded the regulations.

The section directing that no funds may be used to pay consultants at a daily rate in excess of the rate paid a GS-18 has not been included in view of information received by the Committee advising that it placed an undue hardship on consultants by failing to consider overhead costs.

INFLATIONARY IMPACT STATEMENT

Clause 2(1) (4) of Rule XI of the House of Representatives requires that each Committee report on a bill or resolution shall contain a statement whether enactment of such bill or resolution may have an inflationary impact on prices and costs in the operation of the national economy.

Critics of government spending suggest that practically any spending by government is inflationary. If that were true, then the funds proposed in this bill would be inflationary. However, all Federal spending is not inherently inflationary. It should be analyzed in the context of the economic situation in which it is occurring, the financial condition of the government at the time, and the sectors of the economy which the spending may affect.

The amount proposed for appropriation totals \$68,208,848,000. This is \$1,308,686,000 below the President's request. Included in the total recommended are funds for veterans benefits, housing assistance, community development grants, environmental programs and general revenue sharing. Other funds will support advanced technology and science that directly and indirectly increase productivity.

It is the considered opinion of the Committee that enactment of this bill will not have an inflationary impact on prices and costs in the operation of the national economy.

Further information on the purpose of the spending proposed in this bill can be obtained in other parts of the report. Also, a large amount of detailed statistical and financial information can be obtained in the hearings conducted in developing this bill.

CHANGES IN THE APPLICATION OF EXISTING LAW

The Committee submits the following statements in compliance with Clause 3, Rule XXI of the House of Representatives, describing the effects of provisions proposed in the accompanying bill which may be considered, under certain circumstances, to change the application of existing law, either directly or indirectly.

1. The Committee, in a number of instances, has found it necessary to recommend funding for ongoing activities and programs where authorizations have not been enacted to date. This includes some or all of the programs under the Department of Housing and Urban Development, the Environmental Protection Agency, the National Aeronautics and Space Administration, the National Science Foundation, the Council on Environmental Quality, the Consumer Product Safety Commission and the National Institute of Building Sciences.

2. In many cases, the Committee has recommended appropriations which are less than the maximum amounts authorized for the various programs funded in the bill. Whether these actions constitute a change in the application of existing law is subject to interpretation, but the Committee felt this should be mentioned.

3. The bill provides that several appropriations shall remain available until expended for which the basic authorizing legislation does not presently authorize such extended availability. Most of these items have been carried in previous appropriation acts. The Committee deems such language desirable in order to provide for the effective use of the funds.

4. The Committee has included limitations for official reception and representation expenses for selected agencies in the bill.

5. The bill contains a number of administrative provisions under the Environmental Protection Agency and the Veterans Administration which have been carried for a number of years. Some of these could possibly be construed as changing the application of existing law.

6. Sections 401 through 406 of title IV of the bill are general provisions, all of which have been carried in previous appropriation acts, which place limitations on the use of funds in the bill and which might, under some circumstances, be construed as changing the application of existing law.

7. The bill includes, in certain instances, limitations on the obligation of funds for particular functions or programs. These limitations include restrictions on the obligation of funds for administrative expenses, the use of consultants, and programmatic areas within the overall jurisdiction of a particular agency.

8. The provision on page 2, in connection with annual contributions for assisted housing, provides that earmarkings of certain authorities contained in previous acts shall be merged with authority provided in this bill. This could be construed as changing the application of existing law.

9. The appropriation language on page 3, in connection with the uncommitted loan limitations from prior years for the housing for the elderly or handicapped fund, could be construed as changing the application of existing law.

10. The provision on page 4, in connection with housing for the elderly or handicapped, provides that the receipts and disbursements of the fund shall be included in the totals of the budget of the United States Government.

11. The provision on page 6, in connection with community development grants, limiting expenses for planning and management development and administration activities, could be construed as changing the application of existing law.

12. The appropriation language on page 7, in connection with the rehabilitation loan fund, provides for the extended availability of previously appropriated funds. This could be construed as changing the application of existing law.

13. The appropriation language for construction grants on page 13, in connection with section 205(e) of the Federal Water Pollution Control Act, as amended, might, under certain circumstances, be construed as changing the application of existing law.

14. The provision on page 15, in connection with the Consumer Information Center, provides for reimbursement by executive agencies for payment to the Government Printing Office for distribution of free consumer information.

15. The provision on pages 21 and 22, in connection with the Selective Service System, permits the President to exempt the agency from apportionment restrictions of the Budget and Accounting Act of 1921, as amended.

16. The appropriation language for general operating expenses on page 25 provides for reimbursement to the Department of Defense for the cost of overseas employee mail. This language has been carried previously, and permits free mailing privileges for VA personnel stationed in the Philippines.

17. The provision on pages 25 and 26, in connection with construction, major projects of the Veterans Administration, provides that unused portions of funds previously appropriated for specific projects may be made available to other projects.

18. The provision on page 30, in connection with corporations, requires release in an appropriation act of loans and mortgage purchase authority not otherwise required by law.

COMPARISONS WITH BUDGET RESOLUTION

In accordance with section 308(a)(1)(A) of the Congressional Budget Act of 1974 (Public Law 93-344), the following table provides comparisons between the new budget authority targets set forth in the First Concurrent Resolution on the Budget, as allocated by the Committee on Appropriations under section 302 of the Act, and the budget authority contained in the accompanying bill.

Function	Amounts in concurrent resolution	Committee recommendations	Difference
050 National defense.....	\$9,500,000	\$7,045,000	-\$2,455,000
250 General science, space, and technology.....	4,783,770,000	4,698,960,000	-84,810,000
270 Energy.....	824,965,000	114,965,000	-710,000,000
300 Natural resources and environment.....	5,564,395,000	5,261,481,000	-302,914,000
370 Commerce and housing credit.....	1,724,113,000	1,665,191,000	-58,922,000
400 Transportation.....	528,830,000	528,830,000	
450 Community and regional development.....	5,243,853,000	5,001,210,000	-242,643,000
500 Education, training, employment, and social services..	11,737,000	11,700,000	-37,000
550 Health.....	41,463,000	40,000,000	-1,463,000
600 Income security.....	25,529,499,000	25,521,333,000	-8,166,000
700 Veterans benefits and services.....	20,750,074,000	18,471,855,000	-2,278,219,000
750 Administration of justice.....	17,702,000	17,702,000	
800 General government.....	5,747,000	5,402,000	-345,000
850 General purpose fiscal assistance.....	8,109,274,000	6,863,174,000	-1,246,100,000
Total.....	73,144,872,000	68,208,848,000	-4,936,024,000

FIVE YEAR PROJECTION OF OUTLAYS

In accordance with Section 308(a)(1)(B) of the Congressional Budget Act of 1974 (Public Law 93-344), the following table contains the five year projection of the outlays associated with the budget authority provided in the accompanying bill.

Budget authority, \$68,208,848,000.

Outlays:	
1979.....	\$29,325,904,000
1980.....	7,817,688,000
1981.....	3,470,137,000
1982.....	2,272,725,000
1983.....	1,727,122,000
Future years.....	23,596,272,000

ASSISTANCE TO STATE AND LOCAL GOVERNMENTS

In accordance with section 308(a)(1)(C) of the Congressional Budget Act of 1974 (Public Law 93-344), the new budget authority and outlays provided in the accompanying bill for financial assistance to State and local governments are as follows:

Fiscal year 1979 new budget authority: \$25,447,251,000.

Fiscal year 1979 outlays resulting therefrom: \$858,729,000.

95TH CONGRESS } HOUSE OF REPRESENTATIVES } REPORT
 2d Session } } No. 95-1249

TREASURY, POSTAL SERVICE, AND GENERAL
 GOVERNMENT APPROPRIATION BILL, 1979

JUNE 1, 1978.—Committed to the Committee of the Whole House on the State of
 the Union and ordered to be printed

Mr. STEED, from the Committee on Appropriations,
 submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany H.R. 12930]

The Committee on Appropriations submits the following report in
 explanation of the accompanying bill making appropriations for the
 Treasury Department, the U.S. Postal Service, the Executive Office
 of the President, and certain independent agencies, for the fiscal year
 ending September 30, 1979, and for other purposes.

TITLE VI—GENERAL PROVISIONS—DEPARTMENTS,
 AGENCIES AND CORPORATIONS

SECTION 601

This general provision has been modified to increase, by \$700 each, the limitation which agencies may pay for sedans and station wagons. This increase is necessary because of inflationary pressures and will provide maximum competition for obtaining government vehicles.

In addition, a new limitation has been inserted which provides that agencies may pay \$3600 above the basic limitation when it becomes necessary to procure special, heavy-duty vehicles. Each agency is directed to report to the Committee on Appropriations of the House and Senate the number and cost of such heavy-duty vehicles purchased under this authority and the proposed use of such vehicles.

SECTION 602

The committee inserted the following words (which are in *italic*) in section 602:

“(5) South Vietnamese, *Cambodian and Laotian* refugees paroled into the United States between January 1, 1975, and the date of enactment of this act.”

Section 602 generally restricts the employment of certain aliens by the Federal Government. Included among the exceptions to this restriction are Vietnamese refugees paroled into the United States. The committee believes that Cambodians and Laotians paroled into the United States ought to have the same employment rights as those of Vietnamese paroled into the United States and has recommended their inclusion in this bill.

SECTION 613

Section 613. There is a change in phraseology in this section, requested by the Administration to which the committee has agreed. This change would clarify the existing law and provides that GSA may not increase the Standard Level User Charge costs per square foot above that rate which was established by GSA and for which appropriations were granted.

Calendar No. 984

95TH CONGRESS }
2d Session }

SENATE

REPORT
No. 95-1060

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT—INDEPENDENT AGENCIES APPROPRIATION BILL, 1979

AUGUST 1 (legislative day, MAY 17), 1978.—Ordered to be printed

Mr. PROXMIRE, from the Committee on Appropriations, submitted the following

REPORT

[To accompany H.R. 12936]

The Committee on Appropriations, to which was referred the bill (H.R. 12936) making appropriations for the Department of Housing and Urban Development, and for sundry independent executive agencies, boards, institutes, commissions, corporations, and offices for the fiscal year ending September 30, 1979, and for other purposes, reports the same to the Senate with various amendments and presents herewith an explanation of the contents of the bill.

GENERAL STATEMENT

The Committee recommends new budget (obligational) authority of \$68,464,374,000 for the Department of Housing and Urban Development, the Environmental Protection Agency, the National Aeronautics and Space Administration, the National Science Foundation, the Veterans Administration, and 12 other agencies, commissions, boards, corporations, institutes and offices. This amount is \$5,844,227,000 under the appropriations enacted for fiscal year 1978, \$1,053,160,000 below the budget estimate for fiscal year 1979, and \$255,526,000 more than was provided in the House bill for fiscal year 1979.

A table setting forth the budgetary impact of the bill can be found on page 81 of this report. The table compares the total recommended by the Committee with the amount allocated in the first concurrent budget resolution for the programs addressed by this bill. It should be noted that substantial amounts of new budget authority have been reserved pending the passage of authorizing legislation yet to be considered by the Congress, such as proposals to increase veterans benefits.

The summary table on page 3 of this report provides an analysis of the amounts recommended in the bill as compared to the appropriations enacted in fiscal year 1978, the estimates for fiscal year 1979, and the amounts recommended by the House.

HIGHLIGHTS

The Committee has recommended a number of changes in the House bill. The most significant are:

1. The provision of \$4,000,000,000 in stand-by recaptured emergency mortgage purchase assistance authority for use in the event of a housing recession.
2. An increase of \$20,000,000 for a new congregate housing services program for the elderly and handicapped.
3. An increase of \$35,000,000 for clean air and solid waste programs.
4. An increase of \$14,000,000 for areawide waste treatment planning under section 208 of the Federal Water Pollution Control Act.
5. An increase of \$300,000,000 for municipal wastewater treatment facilities.
6. The restoration of \$20,500,000 to the space budget for a Skylab retrieval system.
7. An increase of \$40,000,000 for the research programs of the National Science Foundation.
8. A decrease of \$182,287,000 in funding for the Veterans Administration, including reductions of \$49,300,000 for GI bill benefits, \$62,919,000 in medical care and \$52,085,000 in hospital construction.

REPROGRAMING AND INITIATION OF NEW PROGRAMS

The Committee continues to have a particular interest in being informed of reprogramings both between accounts and within the confines of a single account which may not change either the total amount available in the account nor any of the purposes for which the appropriation is legally available but which represent a significant departure from budget plans presented to the Committee in the various budget justifications.

Consequently the Committee directs that the Department of Housing and Urban Development and the agencies funded through this bill notify the chairman of the HUD-Independent Agencies Subcommittee prior to reprogramming of funds in excess of \$250,000 or 10 percent, whichever is less, between programs or activities. The Committee recognizes that, in some cases, reprogramings may occur because of the functioning of law or other circumstances beyond the control of the agency. This rule is not meant to apply in those situations. The Committee desires to be notified of reprogramming actions which involve less than the above mentioned amounts if such actions would have the effect of committing the agency to significant funding requirements in future years. Finally the Committee wishes to be informed regarding substantial reorganizations of offices, programs, or activities prior to the implementation of such reorganizations.

STATUS OF AUTHORIZATIONS

The Committee notes that authorizations for many of the programs administered by a number of the agencies funded through this legislation, though passed by the Senate, have not yet been signed into law. Included in this category are programs of the Consumer Product Safety Commission, the Department of Housing and Urban Development, the Environmental Protection Agency, the National Science Foundation and the National Aeronautics and Space Administration.

EFFECTS OF COMMITTEE ACTION ON BUDGET OUTLAYS

The budget outlays for the Department of Housing and Urban Development together with the independent agencies funded by this bill resulting from funding requested by the administration would be \$44,285,849,000. The Committee's recommendations would result in an increase in this amount of about \$491,151,000 for a total outlay figure of approximately \$44,777,000,000.

PERMANENT OBLIGATIONAL AUTHORITY

Substantial sums of new budget (obligational) authority are made available by permanent legislation for the continuation of certain government activities that are not subject to the annual appropriation process. Details of these activities for the agencies covered in this bill are reflected in appropriate tables appearing at the end of this report. The most significant are the public debt transactions of the Department of Housing and Urban Development in its mortgage financing and insurance activities, and the life insurance programs of the Veterans Administration. The budget estimates that such permanent authorities will aggregate \$1,258,245,000 in fiscal year 1979.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1978 appropriation.....	\$3,013,000,000
1979 budget estimate.....	3,305,100,000
House allowance.....	3,292,200,000
Committee recommendation.....	3,295,700,000

The Committee recommends an appropriation of \$3,295,700,000 for research and development activities at the National Aeronautics and Space Administration (NASA). This amount is \$3,500,000 above the House allowance and \$9,400,000 below the budget estimate.

NASA conducts the nonmilitary space programs of the United States, including the exploration of space and its utilization for peaceful purposes, and conducts advanced research and development related to space and aeronautics in support of both civil and military requirements. The research and development program at NASA consists of the following activities:

Space transportation systems—Space transportation systems activities provide all the transportation and related capabilities required to conduct space operations. The fiscal year 1979 request for Space transportation systems, a total of \$1,827,700,000, is primarily committed to the continuing development of the Space Shuttle system, but it also includes incremental funding for the procurement of a four-orbiter fleet.

Space sciences—The space sciences program utilizes space systems, supported by extensive ground-based and airborne observations, to conduct a broad spectrum of scientific investigations. The objective is to advance our knowledge of the Earth and its atmosphere, the Moon, the Sun, the inner and outer planets, interplanetary and interstellar space, and the other stars of our galaxy and the universe.

A significant new space science initiative will be the solar polar mission, a joint project with the European Space Agency to send two spacecraft, launched from the Space Shuttle in 1983, past Jupiter, using the gravity of that planet to achieve a trajectory that will permit study of the polar regions of the Sun for the first time. This program will cost \$13,000,000 in fiscal year 1979 and from \$190,000,000 to \$230,000,000 in total.

The second year of space telescope development will see the program move into high gear with a \$79,200,000 investment. The Jupiter orbiter/probe will also consume an increasing share of the space science budget—\$78,700,000—in its second year of funding.

Although the Committee notes that the House has diverted funds from the solar polar mission, the space telescope and the Jupiter orbiter/probe to set up a space shuttle reserve, the Committee does not concur in this decision but rather directs NASA to come before the Committee to justify the need for any additional space shuttle funding.

Space and terrestrial applications—The space and terrestrial applications program uses space, aircraft, and ground-based systems to identify and demonstrate the useful application of space techniques in the areas of Earth resources detection and monitoring, Earth dynamics monitoring and forecasting, ocean condition monitoring and forecasting, environmental quality monitoring, climate research, weather observation and forecasting, materials processing in space, and space communications. The program includes activities to accelerate the dissemination to both the public and the private sectors of advances achieved in NASA's research, technology and development programs.

Two major new initiatives in this program next year will be: (1) a halogen occultation experiment to improve our ability to monitor pollution of the upper atmosphere, costing a total of \$20,000,000 to \$26,000,000 and an initial \$6,100,000 in fiscal year 1979; and (2) an Earth radiation budget satellite system which will contribute to climate research by acquiring data on the energy change between the Earth's atmosphere and space as well as other atmospheric factors important to climate research efforts at a cost of \$8,000,000 in fiscal year 1979 and between \$70,000,000 and \$85,000,000 in total.

Aeronautics and space technology—The aeronautics and space technology program is intended to acquire the fundamental knowledge and to develop the technology needed to maintain United States leadership in aeronautics and space. The program also provides for identification and evaluation of elements of NASA's aeronautics and space technology which can benefit the national energy program.

In fiscal year 1979 the aeronautics program will place an emphasis on the revitalization of the nation's research and technology base, the reservoir of basic knowledge necessary for the development of new aeronautical products. It will also focus on improvements in aircraft energy efficiency, including advances in laminar flow control technology.

Tracking and data acquisition—Tracking and data acquisition funding is for a worldwide program to support deep space, earth orbital, suborbital, and aeronautical programs. In fiscal year 1979 the system will support an average of approximately 60 earth orbital scientific and applications spacecraft and the deep space network supporting a full complement of planetary missions.

In future years a major aspect of the program will be the tracking and data relay satellite system (TDRSS), which will support essentially all earth orbital spacecraft missions and should greatly improve NASA's tracking and data acquisition capabilities.

The Committee is disturbed by recent reports that indicate NASA's decision to lease TDRSS rather than purchase the system outright may be a significant factor in TDRSS cost escalation. The Committee directs NASA to carefully monitor the cost and performance implications of the leasing decision with the understanding that the Committee may wish to receive a comprehensive report on the subject after TDRSS has been deployed.

The Committee has taken the following actions in arriving at the total figure of \$3,295,700 for Research and Development:

Included the \$4,000,000 added to the budget by the House for the fifth orbiter.

Denied the \$4,000,000 added to the budget by the House for the Stereosat program, because Stereosat was not authorized by the Senate authorization committee.

\$5 million of the \$7,000,000 added to the budget by the House for advanced programs has been denied. The remaining \$2,000,000 is for development of the 25 kilowatt power module to support longer duration shuttle flights.

Denied the \$3,000,000 added by the House for the solar satellite power generating system.

Denied the \$7,000,000 added by the House for aeronautical research.

The House reduced the budget estimate for Tracking and Data Acquisitions by \$1,400,000 for the Search for Extraterrestrial Life. The Committee agrees with the House in denying these funds and, in addition, denies a further \$600,000 which was included under Space Science, Research and Analysis in the budget estimate for the same project.

The House reduced the budget estimate by \$10,000,000 for Development, Test and Mission operations. The Committee agrees with the House to the extent of denying \$3,000,000 of this sum.

The House reduced the budget estimate for Expendable Launch Vehicles by \$5,000,000. The Committee agrees with the House to the extent of denying \$2,500,000 of this sum.

The Committee agrees with the House in denying \$1,000,000 of the budget estimate for Tracking and Data Acquisition activities.

The House denied the \$20,500,000 requested for development of the Teleoperator Retrieval System. While the Committee has included the \$20,500,000 for a speed-up of the Teleoperator Retrieval System to accommodate its application to a Skylab reboost or deorbit mission, NASA is directed not to obligate these funds before making a determination that it is feasible to undertake an attempt to reach Skylab in orbit. Should NASA decide to not attempt a Skylab reboost or deorbit mission using the Teleoperator Retrieval System, then NASA is directed to submit a rescission proposal to the Congress for that portion of the \$20,500,000 associated solely with the Skylab reboost or deorbit mission, retaining the remaining sum, which shall be less than one-half of the total, for ongoing development of the Teleoperator Retrieval System.

Denied the budget request for \$5,700,000 for lunar sample analysis and expects that the National Science Foundation will entertain applications for this activity. The Committee does not wish, however, to cause an interregnum in this program and, therefore, expects that NASA will continue to support, from available funds, the more promising on-going lunar sample analysis on a short-term basis while new funding mechanisms, in cooperation with NSF, are established.

Denied \$1,200,000 of the \$8,800,000 requested under Space Flight Operations for commencement of procurement of a second spacelab from the European Space Agency (ESA). This funding reduction assumes successful negotiation of the Spacelab Barter Agreement between NASA and ESA.

CONSTRUCTION OF FACILITIES

1978 appropriation.....	\$160,940,000
1979 budget estimate.....	152,500,000
House allowance.....	134,600,000
Committee recommendation.....	148,500,000

The Committee recommends an appropriation of \$148,500,000 for NASA's construction of facilities program. This amount is \$13,810,000 above the House allowance and \$4,000,000 below the budget estimate.

This appropriation provides for contractual services for the design, major rehabilitation, and modification of facilities; the construction of new facilities; minor construction; the purchase of related equipment and advance design related to facilities planned for future authorization.

The funding recommended for 1979 will permit the continuation of prior year's endeavors in meeting the facilities requirements for the space shuttle program; construction and modification of large aeronautical research and development facilities; and construction, rehabilitation, and modification of other facilities to maintain, upgrade and improve the usefulness of the NASA physical plant; and facility planning and design activities. The program for fiscal year 1979 includes the third increment of funding for two large aeronautical facilities, the construction of a National Transonic Facility at the Langley Research Center and modification of the 40- by 80-foot subsonic wind tunnel at the Ames Research Center.

While the House denied the budget request for \$12,810,000 for the second phase of pad "B" launch complex at the Kennedy Space Center, the Committee has included these funds because of the importance of having this back-up shuttle support facility tested and operationally ready in time to support space shuttle operations should any difficulty develop at the prime launch pad. The House also denied \$5,000,000 in rehabilitation and modification funds. The Senate agrees with the House to the extent of denying \$4,000,000 for these projects.

RESEARCH AND PROGRAM MANAGEMENT

1978 appropriation.....	\$844,000,000
1979 budget estimate.....	914,000,000
House allowance.....	907,000,000
Committee recommendation.....	914,000,000

The Committee recommends the appropriation of \$914,000,000 for research and program management, which is \$7,000,000 over the House allowance and the same as the amount requested in the President's budget.

The research and program management appropriation provides for: (1) the civil service staff comprising the direct civil service personnel needed to perform in-house research, technology, and test activities; and the personnel needed to plan, manage, and support the research and development programs; and (2) the other elements of operational capability of the laboratories and facilities. Over three-fourths of this appropriation covers salaries and benefits of civil service employees. The balance is required for travel, facilities services, technical services, and management and operations support of all NASA installations.

In supporting the full budget estimate, the Committee is aware that NASA has dramatically decreased its personnel in the past few years and that the present budget estimate will support only the fiscal year 1978 personnel level.

NATIONAL SCIENCE FOUNDATION

The Committee notes that a reduction of \$5,700,000 intended for lunar sample analysis has been made in the National Aeronautics and Space Administration's budget. The intent of the reduction was to eliminate special funding for this program in view of the availability of \$24,100,000 in funding for geology, geochemistry, and geophysics in the fiscal year 1979 NSF budget. Consequently the Committee directs the NSF not to reduce funding for these three programs below the fiscal year 1979 budget estimate and to entertain proposals for lunar sample analysis. These proposals are to be evaluated competitively with other applications for funds for basic research in the geological sciences.

TITLE IV—GENERAL PROVISIONS

The Committee agrees that the General Provisions approved by the House and applicable to the Department and agencies in fiscal year 1979 as set forth in Title IV should be controlling with the following additions:

(1) Language on cost sharing requirements, a provision which has been included in this bill for many years, was deleted by the House because of information the House Appropriations Committee received that it served as an impediment to valid projects. The Committee has included the language in the bill again with the understanding that proper regulations based on this provision, and proper interpretation of them, should result in no impediment to or discouragement of grantees or contractors conducting research for the Government. The Committee is concerned that Government regulations implementing this provision have gone beyond its requirements as explicitly set forth in report language accompanying the bills initially containing this provision and in the year following, that cost sharing by a grant or contract recipient is required only when it is demonstrable that the recipient will realize a benefit from the research other than the benefit intrinsic in conducting research for the Government. The "mutuality of interest of the grantee or contractor and the Government" phrase can clearly be interpreted to mean that there will be no cost sharing when the recipient will gain no benefit other than conducting the research in question.

A too-strict interpretation of the cost-sharing requirement could work against the best interest of contractors and grantees, the Government, and the country at large. The strength of this country depends in great part on new research and newly conceived ideas that are generated by all the different intellectual disciplines throughout the country. We must be very careful not to, in any way, discourage the origination and development of new scientific research, whatever its source.

(2) The Committee has recommended the inclusion of language stating that funds may not be used to pay the salary of a consultant, either directly or through a grant, in excess of the daily equivalent rate paid to a GS-18 employee.

The Committee has taken note of complaints regarding section 409 of Public Law 95-119. The complaints are to the effect that this type of provision should not put a lid on payments to firms and individuals who have overhead expenses in addition to direct salary costs. The Committee believes these complaints are justified and has amended the language in question to make it clear that it only relates to salary costs.

The Committee wishes to point out that under section 15 of the Act of August 2, 1946, now codified as section 3109 of title 5, the amount which a Government agency may directly compensate an expert or consultant is limited to the per diem equivalent of the highest rate payable under section 5332 of title 5 unless a higher rate is specifically authorized by the appropriation or other statute authorizing the procurement of the services.

It is for this reason that the Committee has recommended language which would restrict the payment of the salary of an expert or consultant, either directly or through a grant, to the daily equivalent of the maximum rate pay for grade GS-18 under the General Schedule, section 5332 of title 5, unless otherwise specifically authorized by law. This restriction is consistent with section 3535(e) of title 42 which provides that the Secretary of the Department of Housing and Urban Development may obtain services as authorized by section 15 of the Act of August 2, 1946, at rates for individuals not to exceed the per diem equivalent to the highest rate for grade GS-18.

The Comptroller General has decided in 26 Comp. Gen. 188 (1946) that the limitation on the compensation of experts or consultants in section 15 of the Act of August 2, 1946, is not for application when the service contracted for is of a nonpersonal nature and the individuals are not subject to the supervision or control of the Government to such an extent as usually prevails in the case of employer-employee relationships. Rather this restriction is for application to individual services of a purely personal nature which creates an employer-employee relationship. The Committee's recommended language is intended to apply only to the procurement of such services as would fall under the compensation restriction in section 15 of the Act of August 2, 1946 as interpreted by 26 Comp. Gen. 188 and does not cover eligible and allowable overhead costs associated with the provision of such services.

MAKING APPROPRIATIONS FOR THE DEPARTMENT OF
 HOUSING AND URBAN DEVELOPMENT

SEPTEMBER 18, 1978.—Ordered to be printed

Mr. BOLAND, from the committee of conference,
 submitted the following

CONFERENCE REPORT

[To accompany H.R. 12936]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 12936) "making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1979, and for other purposes," having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 4, 10, 23, 26, 35, and 49.

That the House recede from its disagreement to the amendments of the Senate numbered 2, 5, 12, 13, 19, 21, 22, 24, 25, 36, 41, 43, 44, and 46, and agree to the same.

Amendment numbered 27:

That the House recede from its disagreement to the amendment of the Senate numbered 27, and agree to the same with an amendment, as follows:

In lieu of the sum proposed by said amendment insert \$147,500,000; and the Senate agree to the same.

Amendment numbered 28:

That the House recede from its disagreement to the amendment of the Senate numbered 28, and agree to the same with an amendment, as follows:

In lieu of the sum proposed by said amendment insert \$910,500,000; and the Senate agree to the same.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Amendment No. 26: Appropriates \$3,292,200,000 for research and development as proposed by the House, instead of \$3,290,700,000 as proposed by the Senate. The committee of conference agrees that of the \$20,500,000 included in the bill for the teleoperator retrieval system, the National Aeronautics and Space Administration shall not obligate more than \$10 million for continued development of such system without approval of the House and Senate Appropriations Committee. The balance of \$10,500,000 is available only for shuttle funding requirements in the absence of committee approval.

The National Aeronautics and Space Administration is directed not to reprogram any fiscal year 1979 funds from Shuttle production unless a supplemental request to restore such funds has been transmitted to the Congress. The committee of conference assures the agency that prompt consideration will be given any supplemental request to restore funds transferred to Shuttle development from Shuttle production.

The conferees further agree to the project recommendations contained in the report of the Senate with the following changes:

- + \$500,000 for Stereosat;
- + \$2,000,000 for a solar-satellite power generating system;
- \$2,500,000 for expendable launch vehicles;
- + \$1,000,000 for lunar sample analysis; and
- + \$500,000 for a general reduction.

The National Aeronautics and Space Administration is not to apply any of the \$4,500,000 general reduction to congressional increases provided in the bill.

Amendment No. 27: Appropriates \$147,500,000 for construction of facilities, instead of \$134,690,000 as proposed by the House and \$148,500,000 as proposed by the Senate.

Amendment No. 28: Appropriates \$910,500,000 for research and program management, instead of \$907 million as proposed by the House and \$914 million as proposed by the Senate.

TITLE IV—GENERAL PROVISIONS

Amendment No. 47: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate generally prohibiting the use of funds for unsolicited research projects unless recipients share in the cost of the research.

Amendment No. 48: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate prohibiting the use of funds to pay

the salary of a consultant, either directly or through a grant, in excess of the daily equivalent rate paid for GS-18 employees.

The conferees are in agreement with the report of the Senate which notes that this type of provision should not put a lid on payments to firms and individuals who have overhead expenses in addition to direct salary costs.

Amendment No. 49: Deletes language proposed by the Senate relating to Federal assistance for the Love Canal area in the city of Niagara Falls, N.Y.

CONFERENCE TOTAL—WITH COMPARISONS

The total new budget (obligational) authority for the fiscal year 1979 recommended by the committee of conference, with comparisons to the fiscal year 1978 amount, the 1979 budget estimates, and the House and Senate bills for 1979 follow:

New budget (obligational) authority, fiscal year 1978.....	\$75,144,715,000
Budget estimates of new (obligational) authority, fiscal year 1979	69,517,534,000
House bill, fiscal year 1979.....	68,208,848,000
Senate bill, fiscal year 1979.....	67,656,624,000
Conference agreement.....	67,911,419,000
Conference agreement compared with:	
New budget (obligational) authority, fiscal year 1978.....	-7,233,296,000
Budget estimates of new (obligational) authority, fiscal year 1979.....	-1,606,115,000
House bill, fiscal year 1979.....	-297,429,000
Senate bill, fiscal year 1979.....	+254,795,000

Calendar No. 873

95TH CONGRESS
2d Session

SENATE

REPORT
No. 95-939

TREASURY, POSTAL SERVICE, AND GENERAL GOVERNMENT APPROPRIATION BILL, 1979

JUNE 19 (legislative day, MAY 17), 1978.—Ordered to be printed

MR. CHILES, from the Committee on Appropriations, submitted
the following

REPORT

[To accompany H.R. 12930]

TITLE V—GENERAL PROVISIONS—THIS ACT

SECTION 509. The House included restrictive language to prohibit the Internal Revenue Service from implementing regulations to tax so-called fringe benefits that are not presently considered taxable income.

The Committee recommends denial of this provision. Legislative responsibility for enactment of our tax laws is vested in the Senate Finance Committee and the House Ways and Means Committee.

TITLE VI—GENERAL PROVISIONS

DEPARTMENTS, AGENCIES, AND CORPORATIONS

SECTION 601. The House included, and the Committee recommends concurrence, of modification of this general provision to increase by \$700 the limitation which agencies may pay for sedans and station wagons. The Committee agrees that an increase is necessary due to inflation and competition will be enhanced by this increase.

An additional limitation provides authority for paying up to \$3,600 above the basic amount for those situations where it is necessary to procure heavy-duty vehicles. The Committee concurs in this authority and agrees that agencies procuring vehicles under this authority are to report the number procured, cost, and proposed use of these vehicles to Committees on Appropriation of the House and Senate.

SEC. 602. The House included language allowing refugees from Cambodia and Laos paroled into the United States after January 1, 1978 to be eligible for Federal Government employment. The Committee recommends denial of amending this provision. The administration has not requested the amendment and no hearings were held on the subject.

SEC. 611. The Committee recommends concurrence with the administration request and the House approval of a change in phraseology to clarify the existing law and provide that GSA may not increase the Standard Level User Charge costs per square foot above that rate which was established by GSA and for which appropriations were granted.

SEC. 613. This section provides for a pay freeze during fiscal year 1979 for those persons in the legislative, executive, or judicial branches, or the District of Columbia Government earning equal to or greater than the rate of basic pay for level V of the executive schedule under section 5316 of title 5, United States Code (\$47,500).

SEC. 614. By a rollcall vote of 12 yeas to 9 nays, the Committee approved an amendment providing a ceiling on salary increases for wage board workers during fiscal year 1979 to the 5.5 percent ceiling previously announced by the President for general schedule (GS) employees. This provision would be applicable to all Federal agencies and is based on the desire that all Federal employees be treated equally as to fiscal year 1979 salary increases.

Public Law 95-392
95th Congress

An Act

Sept. 30, 1978
[H.R. 12936]

Making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1979, and for other purposes.

Department of
Housing and
Urban
Development—
Independent
Agencies
Appropriation
Act, 1979.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1979, and for other purposes, namely:

TITLE I

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

For necessary expenses, not otherwise provided for, including research, development, operations, services, minor construction, maintenance, repair, rehabilitation and modification of real and personal property; tracking and data relay satellite services as authorized by law; and purchase, hire, maintenance, and operation of other than administrative aircraft, necessary for the conduct and support of aeronautical and space research and development activities of the National Aeronautics and Space Administration, \$3,292,200,000, to remain available until September 30, 1980.

CONSTRUCTION OF FACILITIES

For construction, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and for facility planning and design not otherwise provided, for the National Aeronautics and Space Administration, and for the acquisition or condemnation of real property, as authorized by law, \$147,500,000, to remain available until September 30, 1981: *Provided*, That, notwithstanding the limitation on the availability of funds appropriated under this head by this appropriation Act, when any activity has been initiated by the incurrence of obligations therefor, the amount available for such activity shall remain available until expended, except that this provision shall not apply to the amounts appropriated pursuant to the authorization for rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design.

RESEARCH AND PROGRAM MANAGEMENT

For necessary expenses of research in Government laboratories, management of programs and other activities of the National Aeronautics and Space Administration, not otherwise provided for, including uniforms or allowances therefor, as authorized by law (5 U.S.C. 5901-5902); awards; purchase (not to exceed one, for replacement only of one or more existing aircraft, at least one of which shall be an administrative aircraft, which existing aircraft may be exchanged in part payment), hire, maintenance and operation of administrative aircraft; purchase (not to exceed twenty-nine for replacement only) and hire of passenger motor vehicles; and maintenance and repair of real and personal property, and not in excess of \$25,000 per project for construction of new facilities and additions to existing facilities, and not in excess of \$50,000 per project for rehabilitation and modification of facilities; \$910,500,000: *Provided*, That contracts may be entered into under this appropriation for maintenance and operation of facilities, and for other services, to be provided during the next fiscal year: *Provided further*, That not to exceed \$25,000 of the foregoing amount shall be available for scientific consultations or extraordinary expense, to be expended upon the approval or authority of the Administrator and his determination shall be final and conclusive.

TITLE IV

GENERAL PROVISIONS

Sec. 401. Where appropriations in titles I and II of this Act are expendable for travel expenses of employees and no specific limitation has been placed thereon, the expenditures for such travel expenses may not exceed the amounts set forth therefor in the budget estimates submitted for the appropriations: *Provided*, That this section shall not apply to travel performed by uncompensated officials of local boards and appeal boards of the Selective Service System; to travel performed directly in connection with care and treatment of medical beneficiaries of the Veterans Administration; or to payments to inter-agency motor pools where separately set forth in the budget schedules: *Provided further*, That the limitations may be increased by the Secretary when necessary to allow for travel performed by employees of the Department of Housing and Urban Development as a result of increased Federal Housing Administration inspection and appraisal workload.

Travel expenses.

PUBLIC LAW 95-429—OCT. 10, 1978

92 STAT. 1001

Public Law 95-429
95th Congress

An Act

Making appropriations for the Treasury Department, the United States Postal Service, the Executive Office of the President, and certain Independent Agencies, for the fiscal year ending September 30, 1979, and for other purposes.

Oct. 10, 1978
[H.R. 12930]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the Treasury Department, the United States Postal Service, the Executive Office of the President, and certain Independent Agencies, for the fiscal year ending September 30, 1979, and for other purposes, namely:

Treasury, Postal
Service,
and General
Government
Appropriations
Act, 1979.

TITLE VI—GENERAL PROVISIONS

DEPARTMENTS, AGENCIES, AND CORPORATIONS

92 STAT. 1015

SEC. 601. Unless otherwise specifically provided the maximum amount allowable during the current fiscal year in accordance with section 16 of the Act of August 2, 1946 (60 Stat. 810), for the purchase of any passenger motor vehicle (exclusive of buses and ambulances), is hereby fixed at \$3,400 except station wagons for which the maximum shall be \$3,800: *Provided*, That these limits may be exceeded by not to exceed \$1,700 for police-type vehicles, and by not to exceed \$3,600 for special heavy-duty vehicles.

Motor vehicle
purchase.
31 USC 638c.
31 USC 638g.

SEC. 602. Unless otherwise specified and during the current fiscal year no part of any appropriation contained in this or any other Act shall be used to pay the compensation of any officer or employee of the Government of the United States (including any agency the majority of the stock of which is owned by the Government of the United States) whose post of duty is in continental United States unless such person (1) is a citizen of the United States, (2) is a person in the service of the United States on the date of enactment of this Act, who, being eligible for citizenship, has filed a declaration of intention to become a citizen of the United States prior to such date and is actually residing in the United States, (3) is a person who owes allegiance to the United States, (4) is an alien from Cuba, Poland, South Vietnam, or the Baltic countries lawfully admitted to the United States for permanent residence, or (5) South Vietnamese, Cambodian and Laotian refugees paroled into the United States between January 1, 1975, and the date of enactment of this Act: *Provided*, That for the purpose of this section, an affidavit signed by any such person shall be considered prima facie evidence that the requirements of this section with respect to his status have been complied with: *Provided further*, That any

Police-type
vehicles.
Citizenship
requirement for
employees.
31 USC 6996.

SEC. 404. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

SEC. 405. No funds appropriated by this Act may be expended—

(1) pursuant to a certification of an officer or employee of the United States unless—

(A) such certification is accompanied by, or is part of, a voucher or abstract which describes the payee or payees and the items or services for which such expenditure is being made, or

(B) the expenditure of funds pursuant to such certification, and without such a voucher or abstract, is specifically authorized by law; and

(2) unless such expenditure is subject to audit by the General Accounting Office or is specifically exempt by law from such an audit.

Audit.

Certain
government
transportation,
prohibition.

SEC. 406. None of the funds provided in this Act to any department or agency may be expended for the transportation of any officer or employee of such department or agency between his domicile and his place of employment, with the exception of the Secretary of the Department of Housing and Urban Development, who, under title 5, United States Code, section 101, is exempted from such limitations.

Research
projects.

SEC. 407. None of the funds provided in this Act may be used for payment, through grants or contracts, to recipients that do not share in the cost of conducting research resulting from proposals for projects not specifically solicited by the Government: *Provided*, That the extent of cost sharing by the recipient shall reflect the mutuality of interest of the grantee or contractor and the Government in the research.

SEC. 408. None of the funds provided in this Act may be used, directly or through grants, to pay or to provide reimbursement for payment of the salary of a consultant (whether retained by the Federal Government or a grantee) at more than the daily equivalent of the maximum rate paid for GS-18, unless specifically authorized by law.

5 USC 5332 note.

Short title.

This Act may be cited as the "Department of Housing and Urban Development—Independent Agencies Appropriation Act, 1979".

Approved September 30, 1978.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 95-1265 (Comm. on Appropriations) and No. 95-1569 (Comm. of Conference).

SENATE REPORT No. 95-1060 (Comm. on Appropriations).

CONGRESSIONAL RECORD, Vol. 124 (1978):

June 19, considered and passed House.

Aug. 4, 7, considered and passed Senate, amended.

Sept. 19, House agreed to conference report; concurred in certain Senate amendments and in others with amendments.

Sept. 20, Senate agreed to conference report; concurred in House amendments.

92 STAT. 1015

person making a false affidavit shall be guilty of a felony, and, upon conviction, shall be fined not more than \$4,000 or imprisoned for not more than one year, or both: *Provided further*, That the above penal-clause shall be in addition to, and not in substitution for any other provisions of existing law: *Provided further*, That any payment made to any officer or employee contrary to the provisions of this section shall be recoverable in action by the Federal Government. This section shall not apply to citizens of the Republic of the Philippines or to nationals of those countries allied with the United States in the current defense effort, or to temporary employment of translators, or to temporary employment in the field service (not to exceed sixty days) as a result of emergencies.

Sec. 603. Appropriations for the executive departments and independent establishments for the current fiscal year available for expenses of travel or for the expenses of the activity concerned, are hereby made available for quarters allowances and cost-of-living allowances, in accordance with 5 U.S.C. 5922-5924.

Sec. 604. No part of any appropriation for the current fiscal year contained in this or any other Act shall be paid to any person for the filling of any position for which he or she has been nominated after the Senate has voted not to approve the nomination of said person.

Sec. 605. Funds made available by this or any other Act for administrative expenses in the current fiscal year of the corporations and agencies subject to the Government Corporation Control Act, as amended (31 U.S.C. 841) shall be available, in addition to objects for which such funds are otherwise available, for rent in the District of Columbia; services in accordance with 5 U.S.C. 3109; and the objects specified under this head, all the provisions of which shall be applicable to the expenditure of such funds unless otherwise specified in the Act by which they are made available: *Provided*, That in the event any functions budgeted as administrative expenses are subsequently transferred to or paid from other funds, the limitations on administrative expenses shall be correspondingly reduced.

Sec. 606. Pursuant to section 1415 of the Act of July 15, 1952 (66 Stat. 662), foreign credits (including currencies) owed to or owned by the United States may be used by Federal agencies for any purpose for which appropriations are made for the current fiscal year (including the carrying out of Acts requiring or authorizing the use of such credits), only when reimbursement therefor is made to the Treasury from applicable appropriations of the agency concerned: *Provided*, That such credits received as exchange allowances or proceeds of sales of personal property may be used in whole or part payment for acquisition of similar items, to the extent and in the manner authorized by law, without reimbursement to the Treasury.

Publicity or propaganda.

U.S. Postal Service employees, communication with Congress.

Quarters allowances.

Nominees not approved, compensation restriction.

Interdepartmental groups, expenses.

SEC. 607. (a) No part of any appropriation contained in this or any other Act, or of the funds available for expenditure by any corporation or agency, shall be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress.

(b) No part of any appropriation contained in this Act shall be available for the payment of the salary of any officer or employee of the United States Postal Service, who—

(1) prohibits or prevents, or attempts or threatens to prohibit or prevent, any officer or employee of the United States Postal Service from having any direct oral or written communication or contact with any Member or committee of Congress in connection with any matter pertaining to the employment of such officer or employee or pertaining to the United States Postal Service in any way, irrespective of whether such communication or contact is at the initiative of such officer or employee or in response to the request or inquiry of such Member or committee; or

(2) removes, suspends from duty without pay, demotes, reduces in rank, seniority, status, pay, or performance or efficiency rating, denies promotion to, relocates, reassigns, transfers, disciplines, or discriminates in regard to any employment right, entitlement, or benefit, or any term or condition of employment of, any officer or employee of the United States Postal Service, or attempts or threatens to commit any of the foregoing actions with respect to such officer or employee, by reason of any communication or contact of such officer or employee with any Member or committee of Congress as described in paragraph (1) of this subsection.

SEC. 608. No part of any appropriation contained in this or any other Act, shall be available to finance interdepartmental boards, commissions, councils, committees, or similar groups under section 214 of the Independent Offices Appropriations Act, 1946 (31 U.S.C. 691) which do not have prior and specific congressional approval of such method of financial support.

SEC. 609. Appropriations available to any department or agency during the current fiscal year for necessary expenses, including maintenance or operating expenses, shall also be available for payment to the General Services Administration for charges for space and services and those expenses of renovation and alteration of buildings and facilities which constitute public improvements, performed in accordance with the Public Buildings Act of 1959 (73 Stat. 749), the Public Buildings Amendments of 1972 (86 Stat. 216), or other applicable law.

92 STAT. 1017

Space and service charges and building improvements.

40 USC 601 note.
40 USC 603 note.

92 STAT. 1016

Administrative expense funds.

Foreign credits.

92 STAT. 1017

SEC. 610. Funds made available by this or any other Act to (1) the General Services Administration, including the fund created by the Public Buildings Amendments of 1972 (86 Stat. 216), and (2) the "Postal Service Fund" (39 U.S.C. 2003), shall be available for employment of guards for all buildings and areas owned or occupied by the United States or the Postal Service and under the charge and control of the General Services Administration or the Postal Service, and such guards shall have, with respect to such property, the powers of special policemen provided by the first section of the Act of June 1, 1948 (62 Stat. 281; 40 U.S.C. 318), but shall not be restricted to certain Federal property as otherwise required by the proviso contained in said section, and, as to property owned or occupied by the Postal Service, the Postmaster General may take the same actions as the Administrator of General Services may take under the provisions of sections 2 and 3 of the Act of June 1, 1948 (62 Stat. 281; 40 U.S.C. 318a, 318b) attaching thereto penal consequences under the authority and within the limits provided in section 4 of the Act of June 1, 1948 (62 Stat. 281; 40 U.S.C. 318c).

SEC. 611. No part of any appropriation contained in, or funds made available by this or any other Act, shall be available for any agency to pay to the Administrator of the General Services Administration a higher rate per square foot for rental of space and services (established pursuant to section 210(j) of the Federal Property and Administrative Services Act of 1949, as amended) than the rate per square foot established for the space and services by the General Services Administration for the current fiscal year and for which appropriations were granted.

SEC. 612. None of the funds available under this or any other Act shall be available for administrative expenses in connection with the designation for construction, arranging for financing, or execution of contracts or agreements for financing or construction of any additional purchase contract projects pursuant to section 5 of the Public Buildings Amendments of 1972 (Public Law 92-313) during the period beginning October 1, 1976, and ending September 30, 1979.

SEC. 613. (a) No part of the funds appropriated for the fiscal year ending September 30, 1979, by this Act or any other Act may be used to pay the salary or pay of any individual in any office or position in the legislative, executive, or judicial branch, or in the government of the District of Columbia, at a rate which exceeds the rate (or maximum rate, if higher) of salary or basic pay payable for such office or position for September 30, 1978, if the rate of salary or basic pay for such office or position is—

(1) fixed at a rate which is equal to or greater than the rate of basic pay for level V of the Executive Schedule under section 5316 of title 5, United States Code, or

U.S. or Postal
Service guards.

Rental of space
and services.

40 USC 492.

40 USC 602a.

5 USC 5318 note.

(2) limited to a maximum rate which is equal to or greater than the rate of basic pay for such level V (or to a percentage of such a maximum rate) by reason of section 5308 of title 5, United States Code, or any other provision of law or congressional resolution.

(b) For purposes of subsection (a), the rate or maximum rate (as the case may be) of salary or basic pay payable for September 30, 1978, for any office or position which was not in existence on such date shall be deemed to be the rate or maximum rate (as the case may be) of salary or basic pay payable to individuals in comparable offices or positions for such date, as determined under regulations prescribed—

(1) by the President, in the case of any office or position within the executive branch or in the government of the District of Columbia;

(2) jointly by the Speaker of the House and the President pro tempore of the Senate, in the case of any office or position within the legislative branch; or

(3) by the Chief Justice of the United States, in the case of any office or position within the judicial branch.

(c) For purposes of administering any provision of law, rule, or regulation which provides retirement, life insurance, or other employee benefit, which requires any deduction or contribution, or which imposes any requirement or limitation, on the basis of a rate of salary or basic pay, the rate of salary or basic pay payable after the application of this section shall be treated as the rate of salary or basic pay.

SEC. 614. (a) No part of any of the funds appropriated for the fiscal year ending September 30, 1979, by this Act or any other Act, may be used to pay the salary or pay of any individual in any office or position in an amount which exceeds the rate of salary or basic pay payable for such office or position on September 30, 1978, by more than 5.5 percent, as a result of any adjustments which take effect during such fiscal year under—

(1) section 5305 of title 5, United States Code;

(2) any other provision of law if such adjustment is determined by reference to such section 5305; or

(3) section 5343 of title 5, United States Code, if such adjustment is granted pursuant to a wage survey (but only with respect to prevailing rate employees described in section 5342(a)(2)(A) of that title).

(b) For the purpose of administering any provision of law, rule, or regulation which provides premium pay, retirement, life insurance, or other employee benefit, which requires any deduction or contribution, or which imposes any requirement or limitation, on the basis of a rate

92 STAT. 1018

92 STAT. 1019

of salary or basic pay, the rate of salary or basic pay payable after the application of this section shall be treated as the rate of salary or basic pay.

This Act may be cited as the "Treasury, Postal Service, and General Government Appropriations Act, 1979". Short title.

Approved October 10, 1978.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 95-1249 (Comm. on Appropriations) and No. 95-1673 (Comm. of Conference).

SENATE REPORT No. 95-939 (Comm. on Appropriations).

CONGRESSIONAL RECORD, Vol. 124 (1978):

June 7, considered and passed House.

June 27, considered and passed Senate, amended.

Oct. 4, House and Senate agreed to conference report; resolved amendments in disagreement.

○

BUDGET RESCISSION BILL, FISCAL YEAR 1979

MARCH 1, 1979.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. WHITTEN, from the Committee on Appropriations,
 submitted the following

REPORT

[To accompany H.R. 2439]

The Committee on Appropriations, to whom was referred the bill H.R. 2439, to rescind certain budget authority recommended in the message of the President of January 31, 1979 (H. Doc. 96-46), transmitted pursuant to the Impoundment Control Act of 1974, reports the same to the House without an amendment, with the recommendation that the bill be passed.

SUMMARY OF THE BILL

This is the first rescission bill reported by the Committee on Appropriations during fiscal year 1979 under the provisions of title X of the Congressional Budget and Impoundment Control Act of 1974 (Public Law 93-314).

The message from the President of January 31, 1979, contains ten rescission proposals. The Committee is recommending the approval of the entire amounts proposed for four of these rescissions and approval of partial amounts for three rescissions, and is recommending that three rescission proposals not be approved.

Specific Committee recommendations are explained in the various chapters of this report by Appropriations Subcommittees. Further details concerning particular items can be found in House Document No. 96-46.

INFLATIONARY IMPACT STATEMENT

Pursuant to clause 2(1)(4) of rule XI the Committee considers that the rescission of \$703,515,000 recommended in the accompanying bill will have negligible inflationary impact on prices and costs in the operation of the national economy.

RESCISSION TOTALS

The grand total of budget authority recommended to be rescinded in this bill is \$703,515,000. This is \$211,102,000 less than the amount proposed by the President in his message of January 31, 1979.

COMPARISON OF RESCISSIONS PROPOSED IN H. DOC. 96-46 AND COMMITTEE RECOMMENDATIONS

(In thousands of dollars)

Rescission No.	Department and Activity	Amounts proposed for rescission	Amounts recommended for rescission	Differences
CHAPTER I				
Department of Housing and Urban Development:				
R79-6.....	State housing finance and development agencies.....	\$600,000	\$600,000	.....
R79-7.....	New community assistance grants.....	8,167	8,167	.....
	Total, Department of Housing and Urban Development.....	608,167	608,167	.....
R79-9.....	National Aeronautics and Space Administration: Research and program management.....	2,400	.....	\$2,400
	Total, Chapter I, Subcommittee on Housing and Urban Development-Independent Agencies.....	610,567	608,167	2,400
CHAPTER II				
Department of Health, Education and Welfare:				
R79-3.....	National Institutes of Health: Buildings and facilities..	37,000	.....	37,000
R79-4.....	Health resources.....	167,893	61,796	106,097
R79-5.....	Office of Education: Special projects and training.....	22,365	12,500	9,865
	Total, Chapter II, Subcommittee on Labor-Health, Education and Welfare and Related Agencies.....	227,258	74,296	152,962
CHAPTER III				
R79-10.....	Foreign Claims Settlement Commission: Payment of Vietnam and U.S.S. Pueblo prisoner of war claims.....	9,000	9,000	.....
R79-11.....	Small Business Administration: Salaries and expenses.....	14,665	8,925	5,740
	Total, Chapter III, Subcommittee on State, Justice, Commerce, the Judiciary and Related Agencies....	23,665	17,925	5,740
CHAPTER IV				
R79-8.....	Department of Interior: Bureau of Mines: Helium fund.....	3,127	3,127	.....
R79-2.....	Department of Energy: Fossil energy construction.....	50,000	.....	50,000
	Total, Chapter IV, Subcommittee on Interior.....	53,127	3,127	50,000
	Total.....	914,617	703,515	211,102

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND PROGRAM MANAGEMENT

The fiscal year 1979 HUD-Independent Agencies Appropriation Act authorized the purchase of one replacement aircraft with one or more existing aircraft exchanged for partial payment. Any cost over and above the value of trade-in aircraft must be borne by the National Aeronautics and Space Administration from within available resources. No additional funds were included in the 1979 Appropriation Act for this purpose.

The Committee authorized a new jet aircraft on the basis of need. The National Aeronautics and Space Administration currently operates Gulfstream I turbo-prop aircraft which have limited range and cruising speed. Three of the ten NASA centers and many critical aerospace contractors are located in the West. In addition, some NASA centers and contractor locations are not in areas conveniently served by commercial airlines. These factors combine to make management visits extremely time consuming. With on-going shuttle technical problems requiring increased attention before a first launch attempt—a modern jet aircraft is justified. Therefore, the Committee does not recommend the proposed rescission.

Calendar No. 40

96TH CONGRESS }
1st Session

SENATE

{ REPORT
No. 96-33

FIRST BUDGET RESCISSION BILL, FISCAL YEAR 1979

MARCH 8 (legislative day, February 22), 1979.—Ordered to be printed

Mr. MAGNUSON, from the Committee on Appropriations,
submitted the following

REPORT

together with

VIEWS

of the Committee on the Budget

and

ADDITIONAL VIEWS

[To accompany H.R. 2439]

The Committee on Appropriations, to which was referred the bill H.R. 2439, to rescind certain budget authority contained in the message of the President of January 31, 1979 (H. Doc. 96-46), transmitted pursuant to the Impoundment Control Act of 1974, reports the same to the Senate with amendments, with the recommendation that the bill be passed and submits the following explanation of its recommendations, together with the views of the Committee on the Budget to which the bill was also referred and additional views.

SUMMARY OF THE BILL

This is the first rescission bill reported by the Committee on Appropriations during fiscal year 1979 under the provisions of title X of the Congressional Budget and Impoundment Control Act of 1974 (Public Law 93-344), July 12, 1974.

The message from the President of January 31, 1979, contains 10 rescission proposals. The Committee is recommending the approval of the entire amounts proposed for five of these rescissions and approval of partial amounts for four rescissions, and is recommending that one rescission proposal not be approved.

Specific Committee recommendations are explained in the chapters of this report by Appropriations subcommittees. Further details concerning particular items can be found in House Document No. 96-46.

RESCISSION TOTALS

The grand total of budget authority recommended to be rescinded in this bill is \$723,609,000. This is \$191,008,000 less than the amount proposed by the President in his message of January 31, 1979.

COMPARISON OF PROPOSED RESCISSIONS

[In thousands of dollars]

Rescission No.	Department and Activity	President's proposed rescissions	House recommended rescissions	Senate recommended rescissions
CHAPTER I				
Department of Housing and Urban Development:				
R79-6	State housing finance and development agencies	\$600,000	\$600,000	\$600,000
R79-7	New community assistance grants	8,167	8,167	8,167
Total, Department of Housing and Urban Development		608,167	608,167	608,167
Total, Chapter I, Subcommittee on Housing and Urban Development—Independent Agencies		608,167	608,167	608,167
CHAPTER II				
Department of Health, Education, and Welfare:				
R79-3	National Institutes of Health: Buildings and facilities	37,000	37,000	37,000
R79-4	Health resources	167,893	24,750	46,350
R79-5	Office of Education: Special projects and training	22,365	12,500	12,500
Total, Chapter II, Subcommittee on Labor-Health, Education, and Welfare and Related Agencies		227,258	74,250	96,850
CHAPTER III				
Foreign Claims Settlement Commission:				
R79-10	Payment of Vietnam and U.S.S. Pueblo prisoner of war claims	9,000	9,000	8,000
Small Business Administration:				
R79-11	Salaries and expenses	14,665	8,925	8,065
Total, Chapter III, Subcommittee on State, Justice, Commerce, the Judiciary and Related Agencies		23,665	17,925	14,065
CHAPTER IV				
Department of Interior:				
R79-8	Bureau of Mines: Helium fund	3,127	3,127	3,127
Department of Energy:				
R79-2	Fossil energy construction	50,000		
Total, Chapter IV, Subcommittee on the Interior		53,127	3,127	3,127
CHAPTER V				
National Aeronautics and Space Administration:				
R79-9	Research and program management	2,400	2,400	2,400
Total		914,617	706,869	723,609

CHAPTER V

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND PROGRAM MANAGEMENT

ADMINISTRATIVE AIRCRAFT

*Rescission No.: R79-9**Date proposed: January 31, 1979*

Available new budget authority.....	\$910,500,000
Available other budget authority.....	33,300,000
Proposed rescission.....	-2,400,000
House action.....	-2,400,000
Committee recommendation for rescission.....	-2,400,000

Presidential rationale for proposed rescission: The Department of Housing and Urban Development-Independent Agencies Appropriation Act, 1979 (Public Law 95-392) provided funds for the National Aeronautics and Space Administration (NASA) to purchase an administrative aircraft for which existing aircraft may be exchanged in part payment. NASA estimates the cost to the appropriations in fiscal year 1979 would be approximately \$2,400,000. This rescission is proposed since procurement of a new administrative aircraft at this time is: (a) not essential to carry out the objectives of the Nation's aeronautics and space programs, and (b) is not consistent with the President's desire to reduce governmental operating and administrative travel costs. Existing agency administrative aircraft and commercial airlines can adequately meet the travel requirements of NASA management.

Explanation of Committee recommendation: The Committee agrees with the House in recommending the rescission of \$2,400,000 for a NASA administrative aircraft.

The Committee believes that every effort should be made to reduce fuel consumption through the maximum use of commercial rather than agency aircraft and through the curtailment of non-essential travel. The Committee's recommendation should contribute to this goal.

(19)

BUDGET RESCISSION BILL, 1979

MARCH 20, 1979.—Ordered to be printed

Mr. WHITTEN, from the committee of conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 2439]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 2439) entitled "An Act to rescind certain budget authority contained in the message of the President of January 31, 1979 (H. Doc. 96-46), transmitted pursuant to the Impoundment Control Act of 1974", having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendments of the Senate numbered 1, 2, and 3, and agree to the same.

JAMIE L. WHITTEN,
EDWARD P. BOLAND,
WILLIAM H. NATCHER,
JOHN M. SLACK,
NEAL SMITH,
SIDNEY R. YATES,
SILVIO O. CONTE (except
to amend No. 1),
ROBERT H. MICHEL,
GEORGE M. O'BRIEN,

Managers on the Part of the House.

WARREN G. MAGNUSON,
 JOHN C. STENNIS,
 WILLIAM PROXMIRE,
 DANIEL K. INOUE,
 ERNEST F. HOLLINGS,
 BIRCH BAYH,
 TOM EAGLETON,
 LAWTON CHILES,
 J. BENNETT JOHNSTON,
 MARK O. HATFIELD,
 TED STEVENS,
 RICHARD S. SCHWEIKER,
 HENRY BELLMON,
 LOWELL P. WEICKER, Jr.,
Managers on the Part of the Senate.

39-006 O

CONFERENCE TOTAL—WITH COMPARISONS

The total amount recommended for rescission by the Committee of Conference, with comparisons to the recommendations of the President and the House and Senate bills follows:

Recommendations of the President.....	\$914,617,000
House-passed bill.....	705,869,000
Senate-passed bill.....	723,609,000
Conference agreement.....	723,609,000
Conference agreement compared with:	
Recommended Presidential rescissions.....	-191,008,000
House bill.....	+17,740,000
Senate bill.....	

¹ Does not reflect reduction of \$6 million recommended by the President in his supplementary message of March 15, 1979 (H. Doc. 96-75), as this message was received after House and Senate action.

JAMIE L. WHITTEN,
 EDWARD P. BOLAND,
 WILLIAM H. NATCHER,
 JOHN M. SLACK,
 NEAL SMITH,
 SIDNEY R. YATES,
 SILVIO O. CONTE (except
 to amend No. 1),
 ROBERT H. MICHEL,
 GEORGE M. O'BRIEN,
Managers on the Part of the House.

WARREN G. MAGNUSON,
 JOHN C. STENNIS,
 WILLIAM PROXMIRE,
 DANIEL K. INOUE,
 ERNEST F. HOLLINGS,
 BIRCH BAYH,
 TOM EAGLETON,
 LAWTON CHILES,
 J. BENNETT JOHNSTON,
 MARK O. HATFIELD,
 TED STEVENS,
 RICHARD S. SCHWEIKER,
 HENRY BELLMON,
 LOWELL P. WEICKER, Jr.,
Managers on the Part of the Senate.

○

PUBLIC LAW 96-7—APR. 9, 1979

93 STAT. 11

Public Law 96-7
96th Congress

An Act

To rescind certain budget authority contained in the message of the President of January 31, 1979 (H. Doc. 96-46), transmitted pursuant to the Impoundment Control Act of 1974.

Apr. 9, 1979
[H.R. 2439]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following rescissions of budget authority proposed in the message of the President of January 31, 1979 (H. Doc. 96-46), are made pursuant to the Impoundment Control Act of 1974, namely:

Budget authority,
rescission.

31 USC 1400
note.

PUBLIC LAW 96-7—APR. 9, 1979

93 STAT. 13

CHAPTER V

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND PROGRAM MANAGEMENT

Of the funds appropriated under this head in the Department of Housing and Urban Development-Independent Agencies Appropriation Act, 1979, \$2,400,000 are rescinded.

92 Stat. 798.

Approved April 9, 1979.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 96-25 (Comm. on Appropriations) and No. 96-59 (Comm. of Conference).

SENATE REPORT No. 96-33 (Comm. on Appropriations).
CONGRESSIONAL RECORD, Vol. 125 (1979):

Mar. 6, considered and passed House.

Mar. 14, considered and passed Senate, amended.

Mar. 27, House and Senate agreed to conference report.

AUTHORIZING APPROPRIATIONS TO THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MARCH 19, 1979.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

REPORT

[To accompany H.R. 1787]

[Including cost estimate and comparison of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred (H.R. 1787) to authorize a supplemental appropriation to the National Aeronautics and Space Administration for research and development, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill is to authorize a supplemental authorization to the National Aeronautics and Space Administration for research and development.

Program	Authorization fiscal year 1979 (Public Law 95-401)	Supplemental authorization fiscal year 1979	Page No.
Research and develop- ment (total)-----	\$3, 337, 600, 000	\$185, 000, 000	5

COMMITTEE ACTION

RESEARCH AND DEVELOPMENT—SPACE SHUTTLE

During the 95th Congress, the Committee on Science and Technology authorized the appropriation of \$1,443,300,000 for the Space Shuttle design, development, test and evaluation program and the Shuttle production program for a four orbiter fleet with \$4 million of the funds to be used for a fifth orbiter option.

A need has developed for additional funds resulting from technical problems encountered in the development, manufacturing and testing of the Space Shuttle systems. The additional funding required for fiscal year 1979 (Public Law 95-401) is \$185,000,000.

The committee has reviewed this request and has conducted sufficient investigations and oversight activity to recommend the acceptance of this supplemental authorization request. The effect of the potential delay in the Space Shuttle program if this money is not authorized is estimated at \$400 million to \$600 million. Therefore, the committee recommends this supplemental authorization be adopted by the whole House.

This supplemental appropriation, when added to the \$1,443,300,000 appropriated for fiscal year 1979 would provide a total of \$1,628,300,000 for the Space Shuttle program within the research and development appropriation.

EXPLANATION OF THE BILL

RESEARCH AND DEVELOPMENT SUMMARY

Program	Authorization fiscal year 1979 (Public Law 95-401)	Supplemental authorization fiscal year 1979
Space Shuttle (total)-----	\$1, 443, 300, 000	\$185, 000, 000

SPACE SHUTTLE PROGRAM

A supplemental appropriation of \$185,000,000 is requested to provide the additional funding required for the Space Shuttle program. The Space Shuttle is the key element of a versatile, economical space transportation system that will provide a wide variety of national and international users with round trip access to space beginning in the 1980's. This supplemental appropriation, when added to the \$1,443,300,000 appropriated for fiscal year 1979 would provide a total of \$1,628,300,000 for the Space Shuttle program within the research and development appropriation.

(5)

The need for the additional funds results from technical problems encountered in development, manufacturing and testing of Space Shuttle systems; the need for design changes and weight reductions; and the requirements of prime contractors and subcontractors for increased engineering and manufacturing effort to fabricate hardware and conduct test activities. Intensive development and testing activity is proceeding in fiscal year 1979 with the first orbital flight targeted for late 1979. Consistent with the conference report on the fiscal year 1979 appropriation, funding is being applied to design, development, test and evaluation activities at a rate which supports this plan; orbiter production activities are proceeding on a constrained basis; and the fiscal year 1979 supplemental appropriation is being requested to restore funding for production activities. If the requested supplemental appropriation is not approved, it will be necessary to rebalance the program plan by adjusting the fiscal year 1979 development and test activities with a resultant delay of several months in first orbital flight and by delaying production activities with a resultant 6- to 12-month delay in delivery of the second, third, and fourth orbiter vehicles. The effect of such a delay on overall Space Shuttle program costs is estimated at \$400 million to \$600 million.

96TH CONGRESS }
1st Session }

SENATE

{ REPORT
No. 98-128

NASA SUPPLEMENTAL AUTHORIZATION
FOR FISCAL YEAR 1979

REPORT

OF THE

COMMITTEE ON COMMERCE, SCIENCE,
AND TRANSPORTATION

ON

H.R. 1787

AN ACT TO AUTHORIZE A SUPPLEMENTAL APPROPRIATION
TO THE NATIONAL AERONAUTICS AND SPACE ADMINISTRA-
TION FOR RESEARCH AND DEVELOPMENT



MAY 10 (legislative day, APRIL 9), 1979.—Ordered to be printed

U.S. GOVERNMENT PRINTING OFFICE

39-010

WASHINGTON : 1979

Calendar No. 136

96TH CONGRESS }
1st Session }

SENATE }

REPORT
No. 96-128AUTHORIZING APPROPRIATIONS TO THE NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION

MAY 10 (legislative day, APRIL 9), 1979.—Ordered to be printed

Mr. CANNON, from the Committee on Commerce, Science, and
Transportation, submitted the following

REPORT

[To accompany H.R. 1787]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (H.R. 1787) to authorize a supplemental appropriation to the National Aeronautics and Space Administration for research and development having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE OF THE BILL

The basic purpose of this bill is to authorize a supplemental appropriation of \$185,000,000 to the National Aeronautics and Space Administration for fiscal year 1979 as follows:

Supplemental fiscal year 1979	Budget request	House action	Senate committee action
Research and development: Space shuttle.....	\$185,000,000	\$185,000,000	\$185,000,000

LEGISLATIVE HISTORY

The request for authorization of a supplemental appropriation for the National Aeronautics and Space Administration for fiscal year 1979 was introduced in the House under H.R. 1787 and in the Senate as S. 354. After holding hearings, the House Committee on Science and Technology reported out H.R. 1787 without amendment. The bill was passed by the House and subsequently referred to this Committee.

(1)

S. R. 128

The Committee held hearings on S. 354 on February 21-22, 1979, in conjunction with its hearings on the NASA fiscal year 1980 budget request. A related hearing was also held on May 1, 1979.

The Committee, on May 8, 1979, ordered the House bill, H.R. 1787, reported without amendment.

RESEARCH AND DEVELOPMENT

SPACE SHUTTLE PROGRAM, \$185,000,000

The Space Shuttle, under development since 1972, is the key element of the future U.S. space transportation system. It will provide users, both national and international, with round trip access to low-Earth orbits, beginning in 1981. Higher orbits and planetary missions will be achieved using upper stages such as the inertial upper stage and spinning solid upper stages.

The Space Shuttle will be launched from both the Kennedy Space Center, Fla., and the Vandenberg Air Force Base, Calif.

The Space Shuttle consists of the following basic flight hardware elements: the orbiter and its main engines; the external propellant tank; and twin rocket boosters. In addition, there is a ground-based launch and landing system. It is a reusable system, except for the external propellant tank. Consequently, it will make possible multipurpose, economical space operations for applications, scientific, defense, and technological payloads. It will offer capabilities that cannot be achieved with today's launch vehicles. For example, the Space Shuttle will carry both men and women in space to operate equipment that requires the manual dexterity and logical judgments of humans. It will be able to retrieve payloads from space for reuse; to service and repair satellites in space; to transport materials and equipment into orbit; and to carry out rescue missions if needed. These capabilities of the Shuttle will greatly enhance the flexibility and productivity of space operations and reduce their cost.

The Space Shuttle will have a large payload volume of 285 cubic meters (370 cubic yards) and a weight-carrying capacity of up to 29,500 kilograms (65,000 pounds).

The Space Shuttle will have a crew of three: the commander, the pilot, and a mission specialist. On some missions, one or more payload specialists will be added to the crew to operate payloads. The crew will be able to perform their duties in a shirt-sleeve environment.

The Department of Defense will launch all its spacecraft using the Space Shuttle and has scheduled its transition from expendable launch vehicles. The Air Force is the designated executive agent for the Department of Defense for all space transportation system matters. Coordination between NASA and the Department of Defense is achieved through the NASA/USAF Space Transportation System Committee and by detailing personnel between the Department and NASA to serve on each other's committees, boards, and panels, and in extensive day-to-day coordination.

In support of the Space Shuttle, the Air Force has undertaken the development and production of the inertial upper stage for the Space Shuttle and the full-scale development of the Vandenberg Air Force Base Space Shuttle launch and landing facility. Other efforts are underway in such areas as payload interfaces and integration, mission operations, data, and software systems, and future uses of the Space Shuttle.

S. R. 128

PUBLIC LAW 96-16—JUNE 4, 1979

93 STAT. 33

Summary of resources requirements

Design, development, test, and evaluation:	
Orbiter.....	\$61,500,000
Main engine.....	48,000,000
External tank.....	27,100,000
Solid rocket booster.....	36,700,000
Launch and landing.....	19,500,000
Spares and equipment.....	¹ 7,800,000
Total.....	185,000,000

¹ Represents funds not currently required which can be transferred to the development program.

The Administration submitted a request for authorization of a supplemental appropriation of \$185 million for fiscal year 1979 for the Space Shuttle development program. The supplemental appropriation is needed because of Space Shuttle developmental problems, program changes, and the need for more work than previously planned in the fabrication and assembly of flight test hardware and in systems qualification and certification—particularly with respect to the development and testing of the Space Shuttle main engine and the development and installation of the reusable surface insulation. The impact of these difficulties has been hardware delays, increased engineering, manufacturing, and assembly requirements, and significant deferrals of work from fiscal year 1978 into fiscal year 1979, and a greater effort than previously planned on systems qualifications and certification.

Fiscal year 1980 Space Shuttle budget planning assumes approval of the fiscal year 1979 supplemental appropriation request. If the fiscal year 1979 supplemental funds are not authorized and appropriated, NASA estimates that the total additional Space Shuttle program costs will approximate \$400 to \$600 million. Space Shuttle development, test and evaluation costs would increase \$300 to \$400 million and orbiter production costs would increase \$100 to \$200 million.

This supplemental authorization will increase the fiscal year 1979 authorization for the Space Shuttle program from \$1,443,300,000 to \$1,628,300,000, and increase the total NASA authorization from \$4,401,600,000 to \$4,586,600,000.

Committee comment

The Committee considers the Space Shuttle development program to be of highest priority. The Nation's space launch requirements are dependent upon the availability of the Shuttle system in a timely manner. Delays at this point in the program are very costly. For this reason the Committee is recommending approval of the supplemental authorization request of \$185 million for fiscal year 1979, and the Committee agrees that available funds may be transferred from production to development activities, to the extent it is feasible, to support the development program. NASA is requested to keep the Committee informed fully and currently on program progress and financial status.

Public Law 96-16
96th Congress

An Act

To authorize a supplemental appropriation to the National Aeronautics and Space Administration for research and development.

June 4, 1979

[H.R. 1787]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That paragraph (1) of subsection 1(a) of the National Aeronautics and Space Administration Authorization Act, 1979 (Public Law 95-401), is amended by striking out "\$1,443,300,000" and inserting in lieu thereof "\$1,628,300,000".

National
Aeronautics
and Space
Administration,
appropriation
authorization.
92 Stat. 857.

Approved June 4, 1979.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 96-53 (Comm. on Science and Technology).
SENATE REPORT No. 96-128 (Comm. on Commerce, Science, and Transportation).
CONGRESSIONAL RECORD, Vol. 125 (1979):
Mar. 28, considered and passed House.
May 17, considered and passed Senate.

SUPPLEMENTAL APPROPRIATIONS BILL, 1979

MAY 31, 1979.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. WHITTEN, from the Committee on Appropriations,
 submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany H.R. 4289]

The Committee on Appropriations submits the following report in explanation of the accompanying bill making supplemental appropriations for the fiscal year ending September 30, 1979, and for other purposes.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

The Committee has approved the full budget request of \$185,000,000 to provide for additional funding required for the space shuttle program.

The added requirement results from technical problems encountered in development, manufacturing and testing of the shuttle system. These include problems with engine development, thermal protection and weight reduction. The difficulties encountered have impacted seriously on the first manned orbital launch date and the subsequent delivery of space shuttle orbiters.

The Committee is constrained to point out that since the supplemental request for the shuttle program was submitted in January, additional development problems have occurred which will cost from \$400,000,000 to \$500,000,000 above the current estimated requirement in fiscal years 1980, 1981, and 1982. Because the shuttle system has been funded with a very minimum program reserve through the past five years, as problems developed and as testing and manufacturing requirements were slipped from one fiscal year to the next, the ultimate need for additional funds was inevitable. However, in 1972, the Nation made a commitment to develop a shuttle system that is vital to this country's future in space. The time is passed when any retreat from that commitment is possible, and the Committee believes that it is important to fund the shuttle system to completion as soon as possible. This approach will result in the lowest overall total program cost.

Finally, although the Committee is recommending these funds, it also urges NASA to reexamine the fiscal and programmatic management of the space transportation system. Clearly the shuttle should have been given higher funding priority in earlier days. Such action may have significantly reduced the cost overruns occurring in the final stage of program development.

**COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY ESTIMATES AND AMOUNTS
RECOMMENDED IN THE BILL—Continued**

TITLE II—INCREASED PAY COSTS—Continued

Requested in H. Doc. 96-41 as amended by	Department or activity	Budget estimates	Recommended in bill	Bill compared with estimates
	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION			
	Research and program management.....	30,969,000	25,969,000	-5,000,000

Calendar No. 239

96TH CONGRESS }
1st Session }

SENATE }

REPORT
No. 96-224

SUPPLEMENTAL APPROPRIATIONS BILL, 1979

JUNE 18 (legislative day, MAY 21), 1979.—Ordered to be printed

Mr. MAGNUSON, from the Committee on Appropriations,
submitted the following

REPORT

[To accompany H.R. 4289]

The Committee on Appropriations, to which was referred the bill (H.R. 4289) making supplemental appropriations for the fiscal year ending September 30, 1979, and for other purposes, reports the same to the Senate with various amendments and presents herewith information relative to the changes recommended.

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46-908 O

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1979 appropriations to date.....	\$3,292,200,000
1979 supplemental estimate.....	185,000,000
House allowance.....	185,000,000
Committee recommendation.....	185,000,000

The Committee concurs with the House in recommending a supplemental appropriation of \$185,000,000 to meet additional funding requirements for the National Aeronautics and Space Administration's space shuttle program. This amount is identical to both the budget estimate and the House allowance. The amount recommended by the Committee, when added to the \$1,443,300,000 already appropriated for the shuttle in fiscal 1979, would bring total shuttle program appropriations for fiscal year 1979 to \$1,628,300,000.

The shuttle is a key element of a versatile space transportation system developed by NASA that will provide a variety of national and international users with round trip access to space beginning in the 1980's. The shuttle will be the first reusable space vehicle and is designed to carry scientific, defense-related, and technological payloads of various sizes to and from low Earth orbit. The shuttle consists of a reusable manned orbiter with three liquid oxygen/liquid hydrogen main engines, two reusable solid rocket boosters, and an expendable liquid propellant tank called the external tank.

The supplemental funds recommended by the Committee will allow NASA to address technical problems encountered in development, manufacturing and testing of shuttle systems; the need for design changes and weight reductions; and the requirement of prime contractors and subcontractors for increased engineering and manufacturing effort to fabricate hardware and conduct test activities. Hardware schedule delays, increased engineering and manufacturing requirements in prime and subcontractor efforts, and significant deferrals of work content have occurred as a result of development problems, program changes, and the need for more work than was previously planned, particularly in the fabrication and assembly of flight and test hardware and in systems qualification and certification. According to NASA, an additional \$61,500,000 will be needed to address problems and design changes associated with Orbiter 102: \$48,000,000 for test problems connected with the main engine; \$27,100,000 for technical design changes in the external tank; \$36,700,000 for subsystem alterations to the solid rocket booster; and \$19,500,000 to cover deferrals of work from 1978 into 1979 for launch and landing activities. These amounts will be offset by a \$7,800,000 cut in spares and equipment associated with the shuttle.

The Committee is deeply concerned over a continuing sharp escalation in shuttle costs but recognizes that the Government is committed to an operational shuttle system at the earliest possible date and at the least possible expense. In view of the fact that approximately \$7,400,000,000 will have been appropriated for the shuttle by the end of fiscal year 1979 and further funding induced delays will add substantially to shuttle costs, the Committee believes that it has no alternative to the approval of the supplemental request.

COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY ESTIMATES AND AMOUNTS RECOMMENDED
IN THE BILL—Continued

TITLE II—INCREASED PAY COSTS—Continued

[Amounts in dollars]

H. Doc.	Department or activity	Budget estimates	House bill	Senate committee recommendation	Senate committee recommendation compared with (+ or -):	
					Budget estimates	House bill
	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
	Research and program management.....	\$30,969,000	\$25,969,000	\$25,969,000	-\$5,000,000	—

MAKING SUPPLEMENTAL APPROPRIATIONS,
 FISCAL YEAR 1979

JULY 11, 1979.—Ordered to be printed

Mr. WHITTEN, from the committee of conference,
 submitted the following

CONFERENCE REPORT

[To accompany H.R. 4289]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 4289) making supplemental appropriations for the fiscal year ending September 30, 1979, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 2, 3, 4, 11, 21, 22, 27, 28, 29, 30, 31, 38, 41, 43, 53, 57, 63, 69, 70, 71, 74, 90, 101, 107, 108, 110, 155, 158, 163, and 173.

That the House recede from its disagreement to the amendments of the Senate numbered 6, 10, 12, 13, 14, 15, 16, 17, 18, 20, 24, 32, 34, 35, 36, 42, 44, 51, 54, 55, 60, 64, 65, 66, 68, 105, 109, 113, 115, 116, 118, 119, 121, 122, 123, 124, 125, 126, 127, 128, 130, 132, 133, 134, 135, 137, 138, 139, 150, 151, 152, 153, 156, 157, 159, 161, 162, 164, 165, 166, 167, 168, 170, 171, 172, 174, 175, 176, 177, 178, and 179, and agree to the same.

Amendment numbered 5:

That the House recede from its disagreement to the amendment of the Senate numbered 5, and agree to the same with an amendment, as follows:

In lieu of the sum proposed by said amendment insert \$116,500,000; and the Senate agree to the same.

Amendment numbered 19:

That the House recede from its disagreement to the amendment of the Senate numbered 19, and agree to the same with an amendment as follows:

In lieu of the matter proposed by said amendment insert:

39-006 O

TITLE III—GENERAL PROVISIONS

Amendment No. 181: Reported in technical disagreement. The managers on the part of the House will move to recede and concur in the Senate amendment which allows Senate and House pay to be paid during any Senate and/or House recess of between thirty and forty-five days which occurs on or after August 1, 1979.

Amendment No. 182: Reported in technical disagreement. The managers on the part of the House will move to recede and concur in the Senate amendment amended to read as follows:

"Sec. 304. Section 201 of Public Law 95-480 is amended by inserting before the period at the end thereof the following:

Provided further, That if by the beginning of the fourth quarter, 75 percent of the reduction required by this section has not been achieved, the aggregate amount of budget authority under this act shall not be reduced by an amount in excess of \$301,500,000: Provided further, that if the reduction required by this section results in total budget authority insufficient to pay legal entitlements in the fourth quarter, the Department may borrow from succeeding year funds to pay such entitlements."

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

The conferees wish to express their very serious concern over the unacceptably high rate of errors still occurring in the student assistance, cash assistance (AFDC) and Medicaid programs.

More than 7% of the payments made in the AFDC and Medicaid programs are made to ineligible recipients or are in excess of the amounts they are entitled to. These erroneous payments amount to approximately \$1.2 billion a year.

In order to insure that the relaxation of the Section 201 fiscal constraints does not have the unintended effect of reducing the effort against waste, fraud, and abuse, the conferees direct the Secretary to issue regulations requiring that all States must reduce their AFDC and Medicaid erroneous excess payment rates to 4% by September 30, 1982, in equal amounts each year beginning in fiscal year 1980. If the States fail to make the required reductions, penalties shall be applied equal to the amount the federal share exceeds the dollar error rate for the year or years in question. The conferees note that this requirement commences in fiscal year 1980, and thus direct the Secretary to publish final implementing regulations as soon as possible, but no later than November 30, 1979. The conferees also direct that the base period to be used in determining the yearly reductions for each State shall be the April-September 1978 review period for AFDC and the July-December 1978 sampling period for Medicaid, and that the Department establish a system for determining error rates that insures equal treatment for all States.

The conferees wish to make it clear, both to HEW and the States, that under no circumstances are any payments to legitimate recipients to be curtailed or even delayed. The entitlements due eligible recipients under any programs cited by the Inspector General have never been at

issue. It is the fraud, abuse and waste in those programs that must be reduced to an absolute minimum. That effort demands the attention of Federal and State agencies, and the conferees will insist it be given a higher priority by those officials than their actions to date would indicate.

CONFERENCE TOTAL—WITH COMPARISONS

The total new budget (obligational) authority for the fiscal year 1979 recommended by the Committee of Conference, with comparisons to the fiscal year 1979 budget estimates, and the House and Senate bills for 1979 follow:

Budget estimates of new (obligational) authority.....	\$16,921,679,900
House bill.....	11,572,461,100
Senate bill.....	14,027,712,100
Conference agreement.....	13,783,822,100
Conference agreement compared with:	
Budget estimates of new (obligational) authority.....	-3,137,857,800
House bill.....	+2,211,361,000
Senate bill.....	-243,890,000

¹ Includes \$1,629,921,000 of budget estimates not considered by the House. Does not reflect \$1,048,000 request submitted directly to Congress by Merit Systems Protection Board.

PUBLIC LAW 96-38—JULY 25, 1979

93 STAT. 97

Public Law 96-38
96th Congress

An Act

Making supplemental appropriations for the fiscal year ending September 30, 1979, and for other purposes.

July 25, 1979
[H.R. 4289]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to supply supplemental appropriations (this Act may be cited as the "Supplemental Appropriations Act, 1979") for the fiscal year ending September 30, 1979, and for other purposes, namely:

Supplemental
Appropriations
Act, 1979.

93 STAT. 104 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

For an additional amount for "Research and development", \$185,000,000, to remain available until September 30, 1980.

93 STAT. 139

"Research and program management", \$25,969,000;

TITLE III
GENERAL PROVISIONS

SEC. 301. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

SEC. 302. Except where specifically increased or decreased elsewhere in this Act, the restrictions contained within appropriations, or provisions affecting appropriations or other funds, available during the fiscal year 1979, limiting the amounts which may be expended for personal services, or for purposes involving personal services, or amounts which may be transferred between appropriations or authorizations available for or involving such services, are hereby increased to the extent necessary to meet increased pay costs authorized by or pursuant to law.

SEC. 303. The provisions of sections 491(c) and 491(d) of the Legislative Reorganization Act of 1970, as amended (2 U.S.C. 88b-1), shall

Congressional
pages.
2 Stat. 789.
2 USC 88b-1
note.

PUBLIC LAW 96-38—JULY 25, 1979

93 STAT. 143

not apply to the pay of pages of the Senate and House of Representatives during the period when the Senate and/or the House of Representatives adjourns or recesses on or after the first of August for a period of at least thirty days but not more than forty-five days, such pay may continue until the end of such period of adjournment or recess.

SEC. 304. Section 201 of Public Law 95-480 is amended by inserting before the period at the end thereof the following: "*Provided further*, That if by the beginning of the fourth quarter, 75 percent of the reduction required by this section has not been achieved, the aggregate amount of budget authority under this Act shall not be reduced by an amount in excess of \$301,500,000: *Provided further*, That if the reduction required by this section results in total budget authority insufficient to pay legal entitlements in the fourth quarter, the Department may borrow from succeeding year funds to pay such entitlements."

92 Stat. 1584.

Approved July 25, 1979.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 96-227 (Comm. on Appropriations) and No. 96-331 (Comm. of Conference).

SENATE REPORT No. 96-224 (Comm. on Appropriations).

CONGRESSIONAL RECORD, Vol. 125 (1979):

June 6, considered and passed House.

June 25, 26, considered and passed Senate, amended.

July 17, House agreed to conference report, receded and concurred with amendments in certain Senate amendments, concurred in others, and insisted on its disagreement to Senate amendment No. 82.

July 20, Senate agreed to conference report, concurred in certain House amendments, and receded from its amendment No. 82.

CHRONOLOGY OF EVENTS
AUTHORIZATION BILL
HOUSE (HR 10664) (Superseded by 11401)

<u>SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND WEATHER</u>		<u>FIELD HEARINGS</u>
9/20/77	Dr. Kramer, Dr. Harris, Roger Winblade, John Ward, William Aiken	2/78 <u>Lyndon B. Johnson Space Center</u> - Dr. Kraft, Robert Thompson, Aaron Cohen, Glen Lunney, Mr. Rice, George Abbey, Mr. Johnston, J. Piland, R. Piland, Mr. Tindall
9/21/77	Dr. Kramer, William Aiken	
2/7/78	Dr. Kramer, Dr. Harris, Roger Winblade, John Ward	2/6/78 <u>Marshall Space Flight Center</u> - Dr. Lucas, Robert Lindstrom, William Tier, John Horlow, Thomas Lee, O. Jean, William Keathley, James Murphy, William Huber, Eugene McKannan, Dr. Speer, Charles Ellsworth, William Brooksbank
	<u>SUBCOMMITTEE ON SPACE SCIENCE AND APPLICATIONS</u>	
10/4/77	Dr. Noel W. Hinners, Dr. Ichtiaque Rasool, Charles E. Wash	
10/5/77	John F. Yardley, Dr. James J. Kramer, Robert Nysmith	2/78 <u>John F. Kennedy Space Center</u> - Lee Scherer
10/6/77	Leonard Jaffe, Dr. Anthony J. Calio, Gerald M. Truszynski, Norman Pozinsky, Richard L. Stock, Raymond A. Kline, Richard J. Wisniewski	2/28/78 <u>Jet Propulsion Laboratory</u> - W. Giberson, Raymond Heacock, E. Kane, John Casani, Henry Norris, Robert Edelson
2/1/78	John Yardley, Dr. Malkin, Chester Lee, Philip Culbertson	2/78 <u>Martin Marietta, Michoud Operations</u> -
2/2/78	Dr. Noel Hinners	2/24/78 <u>Rockwell International, Rocketdyne Division</u> -
2/7/78	Dr. Anthony Calio, Leonard Jaffe, Dr. Rasool	3/78 <u>Rockwell International, Space Division</u> -
2/8/78	R.D. Ginter, Dr. Kramer, Dr. Klineberg, Dr. Kurzhals, Dr. Salkind, Mr. Deutsch, Mr. Lazar, Mr. Hayes, Mr. Mullin, Mr. Stephenson, Mr. Schwenk, Mr. Nysmith, Mr. Joseph Slomski, Mr. Hedick, Mr. Norman Pozinsky, Mr. Bryant, Mr. Taylor, Mr. Stock	
2/22/78	Raymond Kline, Robert Curtin, Gerald Mossinghoff, William Lilly, Charles Newman	
2/23/78	Dr. Frosch	
4/25/78	House Floor Action	

CHRONOLOGY OF EVENTS

APPROPRIATION BILLHOUSE (HR 12936)SENATE (HR 12936)

1/25/78 Dr. Frosch, Dr. Lovelace, William Lilly, John Yardley,
Dr. Calio, Dr. Kramer, Kenneth Chapman, Raymond Kline,
Dr. Hinners, Norman Pozinsky, Robert Curtin

4/20/78 Dr. Frosch, Dr. Lovelace, William Lilly,
John Yardley, Neil Hosenball, Dr. Calio,
Dr. Kramer, Dr. Hinners, Raymond Kline,
Kenneth Chapman, Norman Pozinsky,
Dr. Jenkins, Norman Terrell, Robert Curtin,
Dr. Allen

6/1/78 House Committee Report No. 95-1255

6/19/78 House Floor Action

8/1/78 Senate Committee Report No. 95-1060

SPACE SHUTTLE APPROPRIATIONS

8/7/78 Senate Approved

3/9/78 Dr. Frosch, Dr. Lovelace, William Lilly, John Yardley

CONFERENCE COMMITTEE ACTION

9/13/78 Conference Committee Report No. 1569

9/19/78 House Approved Conference Report

9/20/78 Senate Approved Conference Report

9/30/78 President Approved P.L. 95-392

RESCISSION (HR 2439)SUPPLEMENTAL (HR 4289)

3/20/79 Conference Committee Report No. 96-59

7/11/79 Conference Committee Report No. 96-331

3/27/79 House Approved Conference Report

7/17/79 House Approved Conference Report

3/27/79 Senate Approved Conference Report

7/20/79 Senate Approved Conference Report

4/9/79 President Approved P.L. 96-7

7/25/79 President Approved P. L. 96-38

CHRONOLOGY OF EVENTS

AUTHORIZATION BILLSENATE 2527SUBCOMMITTEE ON SCIENCE, TECHNOLOGY AND SPACECONFERENCE COMMITTEE ACTION

2/21/78	Dr. Frosch, Dr. Lovelace, Raymond Kline, William Lilly	8/17/78	Conference Committee Report No. 95-1509
2/22/78	John Yardley, William Schneider, Dan Nebrig	8/17/78	Senate Approved Conference Report
2/28/78	Dr. Hinners, Norman Pozinsky, Frederick Bryant, Charles Taylor, Richard Stock	9/19/78	House Approved Conference Report
3/1/78	Dr. Calio, Leonard Jaffe, Dr. Rasool, Louis Mogavero	9/30/78	President Approved P.L. 95-401
3/7/78	Robert Curtin, Dr. Kramer		
3/8/78	Norman Terrell, Arnold Frutkin		
5/18/78	Senate Floor Action		

SUPPLEMENTAL AUTHORIZATION (HR 1787)

3/19/79	House Report (96-53)
5/10/79	Senate Report (96-128)
6/4/79	Public Law (96-16)